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ENVIRONMENTAL ISSUES

Y 4. EN 2/3: 103-108

Environmental Issues, Serial No. 10...

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SUBCOMMITTEE ON
TRANSPORTATION AND HAZARDOUS MATERIALS
OF THE
COMMITTEE ON
ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED THIRD CONGRESS
FIRST SESSION
INCLUDING

H.R. 1924, H.R. 1925, AND H.R. 2105

BILLS TO AMEND THE SOLID WASTE DISPOSAL ACT, THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT, AND TO ESTABLISH A PROGRAM TO ASSURE COMPLIANCE WITH ALL ENVIRONMENTAL, HEALTH AND SAFETY LAWS, AND FOR OTHER PURPOSES

NOVEMBER 17, 1993—RISK ASSESSMENT
NOVEMBER 18, 1993—ENVIRONMENTAL JUSTICE

Serial No. 103–108

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ENVIRONMENTAL ISSUES
Risk Assessment

WEDNESDAY, NOVEMBER 17, 1993

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON TRANSPORTATION
AND HAZARDOUS MATERIALS,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:32 a.m., in room 2322, Rayburn House Office Building, Hon. Al Swift (chairman) presiding.

Mr. SWIFT. The subcommittee will come to order. Today we are going to discuss environmental risk assessment. Although not a new process; it is receiving an ever-increasing amount of attention in Congress because of the promise it holds for helping us to determine how to more efficiently and economically reduce environmental risk.

There are, however, a number of controversies surrounding the risk assessment process and its application. It is my hope that today's hearing will provide subcommittee members with a better understanding of the risk assessment process so that we can better analyze the bills that have been introduced on this subject.

Risk assessment is a tool which Congress and the administrative agencies can use, but in order to use it properly, it seems to me we have to understand what that tool will do. Just as importantly we have to understand what that tool won't do. And we have to understand that risk assessment information is only one of the many factors we must weigh when making environmental policy.

Risk assessment will not provide us, I suspect, with definitive answers to the choices that we face in allocation of limited resources to our many environmental needs. In fact without a proper understanding of the process, risk information can be quite misleading to the nonscientist. And if my former ranking member were here, he would point out there aren't very many scientists in the Congress. He was a metallurgist and he was always very proud of that. I never told him, but someone said that metallurgy is the one science that is more like alchemy than all the others, but I never told Don that.

But the underlying point that Don made many times was that there are not a lot of technically trained Members of Congress and hence when we are going to rely on technical processes, we need to be careful we in fact do understand them and can use them properly.

All of that leads one to conclude that intelligent debate over the legislative choices on risk assessment requires an understanding of the methodologies and their limitations, and we hope to learn something about that today.

Our witnesses include a number of noted experts who have been asked both to help us develop this understanding and to provide comment on some of the bills that are before our committee. I look forward to their testimony and the participation of the subcommittee members.

I am happy to yield to the ranking Republican of the committee, the gentleman from Ohio, for an opening statement.

Mr. OXLEY. I thank the Chair and indeed Don Ritter would have loved to participate in this kind of a hearing, Mr. Chairman. With all of the excitement and enthusiasm he brought to these kinds of issues, as a lawyer, this is quite a change from a metallurgist to a lawyer as a ranking member, but try to persevere.

I want to begin by commending you for holding this hearing on a topic that is at the heart of environmental decisionmaking. As an original cosponsor of H.R. 2910, the Risk Communication Act, I have a particular interest in this area and I appreciate your willingness to consider this issue.

An understanding of the nature and magnitude of health and environmental risks is the central factor in decisions that members of this subcommittee face when crafting policy under Superfund, RCRA, the Toxic Substance Control Act, Radon legislation, and other bills. Members of Congress, Federal agencies, State agencies, local governments, the regulated community, and the public all need objective and understandable information on risks.

As the primary architects of environmental law and policy, Congress has a duty to seek the most realistic information on the nature and magnitude of risks and to ensure that the system of assessing risk and communicating that information to decisionmakers and the public meets certain minimum objectives.

This hearing is primarily about the communication between the risk assessors who work with the science, and the risk managers who must establish the regulatory priorities and strategies. Risk assessors must respond to the questions and needs of the risk managers.

Historically EPA has only provided a single upper bound or worst case point estimate. This estimate is based on the policy decision to err on the side of safety in the face of uncertainty. While this estimate may be appropriate for a given regulatory standard, this estimate alone is very incomplete and misleading if the goal is to provide a complete or objective picture of the magnitude of the risks.

If given only this information, decisionmakers and the public are simply not apprised of the extent of the conservative bias that separates upper bound estimates from the more plausible best estimates. Nor do risk managers know whether certain models that were not chosen are more plausible on the basis of available science. This is a formula for hidden bias and manipulation.

There has been a great deal of criticism of Agency practices in this area. An EPA appointed panel of experts in a March 1992 report stated that even many Agency personnel perceive that EPA science is adjusted to fit policy. President Clinton's Council of Economic Advisors has recently stated that the practice of only providing worst case or conservative estimates lacks transparency, makes comparisons extremely difficult, and can lead to large distortions in risk estimates. Chairman Dingell has recently stated: "EPA has functioned on the basis of cooked science, cooked information, and has not made fair information available either to the public at large or to the Congress."

Industry groups have claimed that the overestimate from compound conservative assumptions can be over 1,000 fold for estimates of toxicity of the chemical and an additional 1,000 fold overestimate from exposure assumptions in Superfund.

At today's hearing, I would like to specifically explore the impact of compound conservative assumptions on EPA's assessments. Does EPA explain how plausible these estimates are? How conservative they are? Does the variance in compound safety factors make meaningful comparisons between risks more difficult? Are we ignoring more plausible scientific theories under the rationale of erring on the side of safety?

I believe that EPA has taken a number of steps in the right direction. We should, however, keep in mind that risk assessors answer the questions they are asked. If risk managers only ask for upper bound estimates, then risk assessors in individual program offices will probably answer only those questions. We need EPA to paint a more complete picture of the risks as standard practice.

Because of the importance of assessing and communicating risks in an open, objective, and informative way, I join Mr. Moorhead, our ranking member, and Mr. Brown of California, the Chairman of the Committee on Space Science and Technology as an original cosponsor of the bill.

This bill is currently endorsed by the Department of Environment in Illinois, my own State of Ohio, South Dakota, and the Michigan Office of Great Lakes. Organizations representing local governments and the National School Board's Association also join an extensive list in the regulated community in endorsing this legislation.

The bill makes no scientific judgments whatsoever. Congress should not opine on science. The question of which methodology or assumptions are more plausible or how to assess conflicting information is left entirely to the risk assessor. Neither does the bill itself change any statutory standards nor state when risk assessments must be done.

What the bill does provide is a framework for full and consistent disclosure of the choices made during the risk assessment process. This is critical because the choices among assumptions or models can greatly influence risk estimates. The bill also sets a framework for the consistent and informative presentation of information. Minimum information should include, to the extent feasible, the most realistic and plausible estimate of the risk; the reasonable range of scientific uncertainty; and a description of the populations at risk and the likelihood of any particular exposure scenario.

In addition, the bill requires appropriate comparisons to risks with which the public is familiar in order to provide a perspective that cannot be gained with complicated numbers alone. The bill further requires public input, consultation with the States, and a plan to review prior risk assessments in the light of new scientific knowledge.

Consistent guidelines respecting these basic principles will enhance scientific credibility; make it easier for peer review by other scientific and policy groups; make it easier for risk managers to compare risks and set realistic priorities, better inform the American public and subsequently, lead to wise management of environmental programs.

Mr. Chairman, I look forward to today's hearing and hearing from the witnesses. I extend my particular welcome to Mayor Greg Lashutka of Columbus who has come to testify on one of the panels.

Mr. Chairman, I yield back the balance of my time.

Mr. SWIFT. I thank the gentleman. I particularly noted his concerns with compound conservative assumptions which is something I noted on the Floor in general debate on a number of occasions.

I would be happy to recognize the ranking member of the full committee Mr. Moorhead of California, for an opening statement.

Mr. MOORHEAD. Thank you, Mr. Chairman. I want to commend you especially for holding this hearing today and I am pleased at the range of expert witnesses from the scientific and policy arena this morning. We have an outstanding group of witnesses. I am pleased to see a representative of local government here.

It has become obvious over the past several years that environmental programs are having a tremendous financial impact on local governments and that these mandates are siphoning resources away from other programs important to the health and welfare of our citizens.

Environmental programs have become an increasingly large part of our regulatory burden currently costing $130 billion annually. This amount is likely to increase to $185 billion by the year 2000 without any changes in the law. I join Senator Moynihan and many others in the view that while this amount may or may not be too much to spend on environmental programs, it is clearly too much to spend unwisely.

EPA's Science Advisory Board, the National Governors Association, representatives of local governments and businesses are all asking for simple accountability from Federal regulatory programs. They want to make sure that we are spending money based on assessments of real risk, not assessments of excessively hypothetical and exaggerated risks.

Assessing risks is the cornerstone of environmental decisionmaking. Without toxicity assessments, we have no way of defining whether a chemical poses a risk at all. We eat thousands of chemicals with exotic names every day. The cup of coffee you may have had this morning has 19 chemicals which are known to cause cancer in high doses in rodents. There are rodent carcinogens in apples, bananas, broccoli, Brussels sprouts, cabbage, cantaloupe, carrots, cauliflower, celery, cherries, eggplants, mushrooms, brown mustard, peanut butter, and tea, among others. Baking bread and browning meat also produces carcinogens.

Everyday human activities produces many risks. Driving 50 miles in a car creates approximately a one in 1 million risk of fatality. How do we know that the $750 billion we are projected to spend on Superfund and other cleanups address risks that are significant compared to the ordinary risks that we want to avoid?

The question is particularly relevant for the last increment of cleanup. How do we know whether naturally occurring radon gas poses a risk in homes or whether alar on apples or asbestos in schools are really a risk to children? We lost almost $.5 billion on the relatively recent alar scare and have spent $27 billion on asbestos removal, much of which was not necessary.

I give these examples to point out that the risks EPA regulates are not always very clear. They are, instead, the product of numerous EPA assumptions, models, and extrapolations. I think these are saying we should not use risk assessments overlooking the fact that without risk assessments, there would be no environmental programs.

The question is not whether EPA should rely on risk assessments—it does and that fact is not going to change. What we should focus on is ensuring that risk assessments and risk communication are open, objective, and informative to serve the needs of decisionmakers, the regulated community, and the public. We need to make sure that we are governing based upon sound science.

That is why I have joined with Chairman Brown of the Space, Science and Technology Committee as lead sponsor of the Risk Communication Act of 1993. The bill has support among State agencies, local governments, professional groups, and a broad cross section of the regulated community. The principles in this bill are principles that have been discussed or debated for the last decade.

The importance of understanding the issues of risk has been magnified many times over in the last decade. Twenty States and many local governments are performing comparative risk projects. Public outreach and understanding of Superfund and other programs have grown in importance. Our system of providing risk information is a consistent, objective, and understandable way we must also evolve to accommodate those needs and the needs of such priorities.

The Risk Communication Act sets some critical objectives and requirements for our system of communicating risks. It is a first step to ensure that we can compare and understand information from program to program. The bill will help ensure that each subsequent risk manager and the public shares the same information on risks. This will allow us to set priorities and conduct intelligent debates in the future. This is an important investment and worth the burden of changing to a new set of minimum requirements.

An unrealistic understanding of nature and magnitude of risks produces unrealistic expectations, priorities, and programs which themselves cause needless administrative burdens on EPA and very costly burdens for local government and businesses. This is not to say we shouldn't do everything possible to protect our environment to meet the needs that we have to live a top quality life, but we have to know where we are spending our money and we are getting the most out of it, and that the things we do will really have an effect on the environment around us.

Let's get the most for our money, but first we have to know what we are doing, what the risks are going to be.

Thank you, Mr. Chairman. I look forward to hearing the witnesses.

Mr. SWIFT. I thank the gentleman. The Chair is going to ask unanimous consent that all members be permitted to submit opening statements for the record and then we will recognize members in what I hope is the order in which people have arrived.

I have Paxon, Schaefer, Crapo; is that correct? He says he was last. In which case, I will just resort to seniority and recognize the gentleman from Colorado.

Mr. SCHAEFER. Thank you, Mr. Chairman. I also appreciate you holding this hearing today because, as we all know, many decisions involving Superfund revolve around political issues and public perceptions. Risk assessment is one of the few tools we have which can view a Superfund site on purely a scientific basis.

This makes it extremely important for us to properly define the role of risk assessment within the context of the Superfund program. Much of the evidence we now have indicates that the Federal Government is presently far too cautious in its calculation of risks of hazardous waste sites.

I am also sure there are those who would argue that the current process is far too lenient. One thing we can all agree on is the need for accurate and well-balanced data on the relative health risks of living near areas contaminated with hazardous waste. If you are starting with incorrect assumptions, it is impossible to reach an accurate conclusion.

I thank you, Mr. Chairman. I look forward to hearing the witnesses today on this very critical issue relating to the reauthorization of the Superfund program, which we know needs a lot of fixing.

Thank you, Mr. Chairman. I yield back.

Mr. SWIFT. I thank the gentleman very much and recognize the gentleman from Idaho for an opening statement.

Mr. CRAPO. Thank you, Mr. Chairman.

And I agree wholeheartedly with the comments that have already been made and rather than delay any longer getting into the testimony, I would waive a formal statement.

Mr. SWIFT. I thank the gentleman more than he can know, and recognize the gentleman from New York for an opening statement.

Mr. PAXON. In the spirit of the moment, ditto.

Mr. SWIFT. Ditto to you as well. I thank the members for their cooperation.

We are very happy to recognize our first panel. I am going to ask unanimous consent that the prepared statements of all our witnesses in this hearing will be inserted in the record, and that all witnesses will be able to proceed in their own way.

And with that, I am happy to recognize the Honorable Thomas Grumbly who is Assistant Secretary for Environmental Restoration and Waste Management with the Department of Energy.

Mr. Secretary.

STATEMENTS OF THOMAS P. GRUMBLY, ASSISTANT SECRETARY FOR ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT, DEPARTMENT OF ENERGY; LYNN GOLDMAN, ASSISTANT ADMINISTRATOR FOR PREVENTION, PESTICIDES, AND TOXIC SUBSTANCES, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY WILLIAM FARLAND, DIRECTOR, OFFICE OF HEALTH AND ENVIRONMENTAL ASSESSMENT; RAYMOND LOEHR, PROFESSOR, CIVIL ENGINEERING DEPARTMENT, UNIVERSITY OF TEXAS; AND MICHAEL GOUGH, PROGRAM MANAGER, BIOLOGICAL AND BEHAVIORAL SCIENCES PROGRAM, OFFICE OF TECHNOLOGY ASSESSMENT

Mr. GRUMBLY. Thank you, Mr. Chairman, members of the committee. Thank you for including my full statement in the record. I will try to summarize as rapidly as I can.

Although I will not be addressing the administration's position on the two bills that your colleagues have introduced, I believe that what I am prepared to discuss with you today will demonstrate that the Department of Energy is seriously trying to grapple with your concerns on the matter of environmental risk and risk communication.

I will discuss the use of risk evaluation which encompasses both the quantitative and qualitative understanding of risks in setting environmental priorities. This term risk evaluation I think captures the basis for constructing viable risk management programs in the environmental restoration and waste management program in DOE and is consonant, I think, with key issues in both proposed bills.

Conversely, when we use the term risk assessment, I think we tend to get lost in debates over numbers and risk losing sight of the forest for the trees. I don't mean to discount the importance of the numerically derived values, I just want to emphasize that our goal at DOE at least is to develop a meaningful and credible way to determine and prioritize the problems at each major Department of Energy site across the country so we can work together with you and other Members of the Congress, the State regulators with whom we have to work, and the public to deal with these risks in an orderly and cost-effective fashion.

Today I want to review with you what has happened in the area of the risk evaluation over the last 10 years and what lessons we might draw from that experience. I want to discuss briefly the role that I think risk evaluation should play in setting environmental priorities for cleanup of radioactive and hazardous waste at Department of Energy defense nuclear facilities and how interaction with the public should be factored into risk evaluation and risk management.

As part of this discussion, I want to share with you the details of the 2-year effort that we have just started to establish a credible risk evaluation program which will meet the needs of the Department's Environmental Restoration and Waste Management program.

During the 5 months that I have been on the job so far, I have established several major priorities which I discuss in my written statement. And we are working on a number of initiatives in line with Vice President Gore's Reinventing Government effort.

All of our efforts are aimed at trying to get results during the next 3½ years in three areas. First, to really try to protect the public and our worker safety and health and environment. Second, to try to establish ourselves in an area where we haven't been distinguished in the past, and that is as outstanding stewards of public resources with productive relationships with our stakeholders and our contractors. And third, to try to take advantage of the really tremendous opportunity that DOE has to become technological leaders in the world in environmental restoration.

As I hope will become clear to you from my testimony today, I think that viable, credible risk evaluation is a key to success in all three of these areas. Just a little bit as background, the Environmental Management program in DOE is currently the single largest environmental program in the world, spending this fiscal year nearly $6.2 billion.

Our single program is larger than the entire resources of the Environmental Protection Agency. It is the single largest program in the Department of Energy. I don't say that with any pride. I simply say that as a matter of fact. We are engaged in the largest cleanup program that has ever been conducted.

As we try to deal with the legacy of the Cold War, we need as much as we possibly can to identify the highest risks and make sure that they are taken care of, and we need to know whether our efforts have produced the desired outcome of really reducing risks.

I would like to touch briefly on what has happened with risk assessment in the Federal Government over the past 10 years. Since 1983, three reports have been issued on the subject of risk assessment as detailed in my formal testimony. The bottom line, I think, after all these efforts, is really a rather dim view of our ability during the 1980's to accurately assess risks and also turn our national priorities in line with assessing risks, and also the concern has been raised that disproportionate resources were potentially being directed toward hazardous waste sites which may or may not be the biggest environmental and public health risks facing our society.

At DOE during the 1980's we made some attempts to establish computerized priority systems early on and later a risk-driven priority system. Unfortunately, I think each of these efforts proved unworkable because of a combination of technical problems, some of which we are going to talk about here today, and lack of regulator and public involvement.

I mean, I think nobody in the past 10 years either, particularly inside the government, made adequate or credible progress in actually doing the research and then defining what the risks are on a site-by-site basis so that there could be a common understanding of what we are really trying to accomplish in cleanup.

I think some of the lessons we learned 15 years after Love Canal and 4 years into this gigantic program is that we still don't have a good understanding of exactly what the risks are out in the country. We have got to have a way to systematically review and redefine the risks at DOE sites and other hazardous waste sites.

But there is skepticism associated with risk assessments done by those who are perceived to have caused the problem. The one we received the most is that we are the group that caused the problem trying to clean it up. And that is a legitimate concern we have to deal with.

Perhaps the most important thing we are learning is who does the risk evaluation and risk assessment matters as much as what assumptions are going into the process. The people who do it have to be credible and independent. They have to have the trust and confidence of the customers, and by customers I mean the regulators and the citizens who actually live around hazardous waste sites.

Additionally there are some key questions on doses and exposures that must be answered when defining risk methodologies. There are some sensitive issues relating to how much we are all willing to pay as a society to reduce the risk of sickness or death which must be factored into the process.

All of us, whether we are regulators, in the Congress, or in the executive branch, need an understandable common approach to define risks so that we can move in an orderly fashion to control or eliminate the biggest risks. We need to protect and use wisely the public tax dollars that we have been entrusted to manage, and at DOE we are committed to ensuring that our risk management programs will be a science-based effort drawing not only on the best paper studies that are around but also where we have the ability to take the kind of steps and do the kind of exposure analyses that are necessary to establish data to be persuasive in that area.

Let me talk quickly about the specifics on what we are doing and then I will conclude. As I have stated, we have initiated a 2-year effort at the direction of the Congress and in line with our recent Energy and Water Appropriations bill, and I want to emphasize that a lot of what we are doing we are doing because we think it is the right thing, but also because the Congress has demanded that we undertake a credible evaluation program with a comprehensive effort to develop better tools and independent methods for evaluating health risks. We are doing this because it needs to be done, but also because the Congress has directed that this be complete by June 1996.

We intend to complete a comprehensive study of immediate exposure risks during this fiscal year, and at the same time we will be developing appropriate analytical tools for evaluating long-term risks as well as specifying individual data needs. These will be completed by the end of fiscal year 1995.

As we proceed to gain a better understanding of risks, DOE will be able to reach out, and very well, to reach out to the academic and public health communities, States, regulators, citizens, Indian Nations, and all the other stakeholders that we need for input that will greatly improve our decisionmaking.

I think at your seat you may have a little picture of a schematic of what it is we are trying to do at DOE. Two weeks ago on November 3rd and 4th, at my request, the National Research Council of the National Academy of Sciences conducted a workshop to review risk management at the Department's Environmental Restoration and Waste Management program.

This workshop was a big step in our effort to come up with the necessary credible, scientifically based risk evaluation program to define on a site-by-site basis in a meaningful way the major long-term product and health and environmental risks at our sites.

I emphasize site-by-site because I really believe there is a problem in doing risk assessment in an attempt, for example, to compare risks at a site in Idaho with risks at a site in Colorado. I don't think that is workable in our political system. I think we have got to define ways that we look at things essentially on a State-by-State or site-by-site basis to deal with the problem so we don't get ourselves wrapped around a pole trying to compare what is happening in Idaho with what is happening in Colorado. The citizens of both States deserve to have their needs reviewed.

We have begun a new effort to collect data and break through ground, and we need involved citizens in the process. I think we are going to need a unique institutional framework that I indicated before that is credible and not owned by us to be able to relate to stakeholders and able to act in a timely manner and able to integrate this knowledge.

In essence, I think we have learned the fundamental lesson that perhaps DOE has resisted for many years and I don't think we are the only victims of this, that is, in order to be credible, we have to let the thing go. We have to let the scientific and technical communities in the Nation that have the credibility and the competence in this area to actually do the job for us.

The point obviously is to try to assign the resources to institutions that have credibility. We need to give up control, be willing to live with the consequences, whatever independent information provides. Our objective is to produce credible risk estimates that can serve as a useful basis for working with regulators and the public for managing our program cost effectively.

And the reason why that is important, and I will really end with this, is that we have 92 compliance agreements that we signed up for the last 4 years around the country that commit us to really an enormous set of expenditures over the next 10 years. A lot of that has to do with Superfund.

What we have to do is create the kind of estimates on the ground so that we know whether the compliance agreements that we have signed up for are really in synch with the major risks that are out there. How do we do that?

I think we need the help of all the kind of credible people that we have around the table here. But in the same way that I know your committee is struggling with Superfund at the moment, you just couldn't struggle with a more important issue because if we can make major savings in the way we approach these issues, while making sure that we deal with the highest priority problems that are out there, we can save the American taxpayer a tremendous amount of money and still accomplish all the high priority purposes that need to be accomplished in hazardous waste cleanup.

So this issue of how we do risk evaluation, how we do risk assessment, I think does lie at the basis of a lot of debate that you are about to have over the next year, about how to change, alter, or to work to keep in the same State the Superfund program.

So with that let me turn it back to you.

Mr. SWIFT. Secretary Grumbly, thank you very much.
[The prepared statement of Mr. Grumbly follows:]

STATEMENT OF THOMAS P. GRUMBLY, ASSISTANT SECRETARY FOR ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT, U.S. DEPARTMENT OF ENERGY

Mr. Chairman, I appreciate the opportunity to appear before this committee to discuss the process of environmental risk assessment. Although I will not be addressing the administration's position on the two proposed bills, H.R. 2910 entitled Risk Communication Act of 1993 and H.R. 3111 entitled Environmental Risk Reduction Act of 1993, I believe that what I am prepared to discuss with you today will demonstrate that the Department of Energy is on course with your concerns on the matter of environmental risk and risk communication.

I will discuss the use of risk evaluation in setting environmental priorities. I use the term risk evaluation to encompass both quantitative and qualitative understanding of risk. This term is intended to encompass the essence of the purpose of Congressman Moorhead's bill, H.R. 2910; that is, objective science on health and safety, full discussion of the data and methodologies, clear explanations of significant choices in the risk assessment process, and a consistent and honest application of the process for all communities. Similarly, our program is consonant with Congressman Zimmer's bill, H.R. 3111, which advocates the use of outside, blue ribbon committees such as the National Academy of Sciences and the National Academy of Engineering to assure a careful assessment and ranking of relative risks.

Two weeks ago, on November 3 and 4, at my request, the National Academy of Sciences conducted a workshop on Risk Management in DOE's Environmental Remediation Program. The Academy's report will be made available to me by late December, and I intend to utilize it in constructing my risk management programs. Further, whenever it appears useful, I will utilize the enormous capabilities of the National Academy of Sciences to assist me with highly skilled advice.

In constructing my risk management programs, I am using the term risk evaluation rather than risk assessment to describe the process which will be incorporated into these programs. When we use the term risk assessment, I think we tend to get lost in debates over numbers and risk losing sight of the forest for the trees. I don't mean to discount the importance of numerically derived values—I just want to emphasize that our goal is a meaningful way to determine and prioritize the risks at the Department of Energy sites across the country, so that we can work with you and other Members of Congress, the regulators, and the public to deal with those risks in an orderly and cost-effective fashion.

Today I would like to review with you what has happened in the area of risk evaluation over the past 10 years and what lessons we might draw from that experience. I would also like to discuss the role that I think risk evaluation should play in setting environmental priorities for the cleanup of radioactive and hazardous waste at Department of Energy facilities and how interaction with the public should be factored into risk evaluation and risk management. As part of this discussion, I want to share with you the details of a 2-year effort we have just started (in line with the Conference Report accompanying the fiscal year 1994 Energy and Water Development Appropriations Bill) the goal of which is to establish a credible risk evaluation program which will meet both the Congressional requirements as specified in the Conference Report and the needs of the Department's Environmental Restoration and Waste Management program.

I. PROGRAM OVERVIEW

I've been on the job for 5 months now. As I have told other committees in previous testimony, there are six priorities that I have set against which our program's progress is being measured: (1) Address the Urgent Risks; (2) Assure Worker Safety; (3) Be Outcome Oriented, Get Tangible Results; (4) Establish a System that is In Control, Managerially and Financially; (5) Focus Technology Development Efforts; and (6) Establish Stronger Partnerships Between DOE and Its Stakeholders.

We are also working on a number of initiatives in line with Vice President Gore's "Reinventing Government" effort.

All of our efforts are aimed at getting results in three areas. This is our vision: First, protecting the public's and our workers' safety and health and the environment. Second, establishing ourselves as outstanding stewards of public resources with productive relationships with our stakeholders and contractors. Third, taking advantage of the really tremendous opportunity that this program has, and the Department of Energy has, to become technological leaders of the world in environmental restoration.

As I hope will become clear to you from my testimony today, I think that viable, credible risk evaluation is a key to success in all three of these areas.

Since 1989, the Environmental Management program has operated in a dramatically changing public environment. Four years ago, there was still a Soviet Union; the Department of Energy was still making nuclear weapons; the first revelations about the scope and cost of four decades of neglect were just beginning to take shape; and the Department faced a great deal of skepticism from the public.

Today, we're operating in an environment in which Environmental Management is not only the biggest program in the Department of Energy—consuming about 35 percent of the resources in the entire Department—it is the single largest environmental program in the world. We continue to face public skepticism, which we are striving to overcome through better program management and more open interaction with our stakeholders. Good risk management, which cannot happen without good risk evaluation, is critical to the success of our program.

Our highest priority is controlling the immediate risks in our system, emphasizing worker health and safety as well as public health and environmental protection. We need to identify the highest risks and make sure they are taken care of, and we need to know whether our efforts have produced the desired outcome of reducing risk. Our workers and the citizens who live near our sites deserve to know what the risks are.

II. REVIEW OF GOVERNMENT EFFORTS AT RISK ASSESSMENT

I'd like to review briefly with you what has happened with risk assessment in the Federal Government over the past 10 years.

In 1983, the National Research Council published "Risk Assessment in the Federal Government: Managing the Process" (commonly known as the "Red Book"), which was considered the risk assessment 'bible.' In 1987, the Environmental Protection Agency published "Unfinished Business: A Comparative Assessment of Environmental Problems," which indicated serious concerns about the allocation of resources in proportion to risk and suggested a more rigorous review of the problem. This more rigorous review was performed by the EPA Science Advisory Board which published their findings in the five volume report, "Reducing Risk." This landmark report found that adequate models and the data to conduct meaningful risk assessments were simply not available. However, despite this dim view of our ability to accurately assess risks, the report suggested that disproportionate resources were being directed toward hazardous waste sites, which may not be the biggest environmental and public health risks facing our society.

In 1991 the Office of Technology Assessment published its landmark study, "Complex Cleanup," regarding the environmental problems in the DOE nuclear weapons complex. One of its major findings was that the Department lacks a sufficient basis for evaluating health and environmental risk.

One of the Department of Energy's early efforts at establishing a computerized priority system came in early 1980's with a system proposed for use in selecting a high level nuclear waste repository. The Department proposed to use essentially the same system for environmental restoration in August 1988 with the publication of "Priority System for Department of Energy Defense Complex Environmental Restoration Program, A Report Prepared for the House Armed Services Committee." At the same time, another effort in DOE (Office of Environment, Safety and Health) was releasing the results of a 3 year, $60 million effort to establish a baseline risk survey and a risk-based priority scheme. Yet another priority system for environmental restoration was proposed in 1991. Unfortunately, each of these efforts proved unworkable because of a combination of technical problems and lack of regulator and public involvement.

The Federal Government's efforts at risk assessment over the past decade were viewed by many outside the government, including myself, as being insufficient. Unfortunately, nobody over the past 10 years, either inside or outside the government, has made adequate or credible progress in actually defining what the risks are on a site-by-site basis so that there is a common understanding of what we are trying to accomplish. The Department is now taking steps to establish that understanding, as I will explain later in my testimony.

III. LESSONS LEARNED

More than 15 years has passed since a series of hazardous waste problems first shocked public consciousness:

—Love Canal, New York, an elementary school was built on a hazardous dump site, and nearby residents suffered from a variety of maladies;

—Valley of the Drums, Kentucky, leaking drums contaminated an adjacent creek; and

—Chemical Control, New Jersey, an explosion ripped through a drum storage yard and caused massive air pollution from the ensuing fire, and chronic seepage into the nearby waterways continued until the site was capped.

Unfortunately, all these years later, we still don't have a good understanding of exactly what the risks are. We've got to have a way to systematically review and define the risks at DOE and other hazardous waste sites. The most important thing we've learned is that who does the risk assessments matters. The risk assessments that have been produced to date—and I think some of that work was valid—were produced by the same people perceived as having caused the problems. I think it's fair to say that DOE couldn't sell its own credibility if it were listed as a blue chip stock on the New York Stock Exchange. However, there have been some valid attempts made, so it is important to see how we can add value to what's been done.

In past attempts to define a methodology, the many questions that have been debated include: What is the maximum dose? Who is exposed? What is individual exposure? Who's the maximum exposed individual?

We've got to figure out whether these are the most important questions. Other questions include: Should "risk" be defined only by a set of numbers? When and how should qualitative values be factored in? Is "risk" really the right word, or should we also be making use of the word "threat"? It's a risk to get in your car and drive around the beltway at rush hour. I would say that having a truck jackknife 100 feet in front of you on the beltway, in the middle of a snowstorm, would be a threat.

We also need to grapple with the very basic and very sensitive issue: What is the value of preventing or reducing the risk of sickness or death? How much is society willing to pay to prevent or reduce the risk of sickness or death? How do we deal with the large disparity in government programs regarding the numbers derived to date dealing with the risks, costs, and benefits in terms of this basic issue?

We've got other important issues to keep in mind, too.

—We obviously need some meaningful quantitative data, but we need to remember who our customers are—the public—and factor in some qualitative factors that accurately address their concerns.

We need to balance the concerns of the public health community, which is concerned with the results of and threats from past events and their consequences, and the risk assessment community, which tends to focus more on current and possible future problems.

—We need to remember that there are more than just technical problems to consider in risk evaluation. We have to address hard institutional and political problems too.

IV. WHY RISK EVALUATION IS NEEDED

First, all of us—the administration, the Congress, State and local regulators, and the public—need an understandable, common approach to define the risks, so that we can move in an orderly fashion to control or eliminate the biggest risks. We need to find out whether the framework of the compliance agreements DOE, other parts of the government, and the private sector have signed up to bear a close relation to what the problems actually are. We must assure ourselves that our resources are assigned to the real risks.

Mr. Chairman, I also recognize that we need to work with the regulators to ensure that our compliance agreements reflect a meaningful assessment of the risks, the costs, and the benefits. When negotiating new compliance agreements, the Department is faced with a variety of environmental laws and regulations. Many individuals view these agreements from the other side and say, "These risks don't justify the actions. The risks are low and you are asking us to do too much." But I can't put credible evidence on the table about what those risks are. We need to develop the kind of information on a site-by-site basis that will, in fact, give us the ability to negotiate effectively with State and Federal regulators. As I mentioned before, worker health and safety is a top priority of ours, and we need to remember that our workers have the greatest exposure to risk on a daily basis. Dealing with risks means we'll also be better equipped to communicate those risks to the public, State and Federal regulators, and other stakeholders.

Second, we need to do this not just to protect public and worker health and safety and the environment but also to protect and use wisely the public tax dollars that we've been entrusted to manage. Congress, in the past 4 years, has appropriated $19 billion; and we've spent $12 billion for the Department of Energy's Environmental Restoration and Waste Management program. But we are at the bottom end of the cost curve. From now until 1997, we'll be in the knee of the curve that, if unchecked, could take us from $6 billion a year today to in excess of $10 billion per year by the end of the century. The fact is that by next year—fiscal year 1995—and accelerating out to the end of the century, the discrepancy between how much money we have, or are likely to have, and what the requirements are will grow increasingly larger.

Our solution definitely cannot be just to ask one of our contractors to produce estimates that we think are right but that nobody else in the world believes. We're committed to ensuring that this will be a science-based effort that fulfills the directives of the Conference Report, drawing not only on the best paper studies that are around but also, where we actually have the ability to do so taking the kind of samples and doing the kind of exposure analysis that's necessary to establish the data to be persuasive in this area.

V. WHAT THE DEPARTMENT OF ENERGY IS DOING ABOUT RISK EVALUATION

Unfortunately, little progress has been made at the Department since the 1991 OTA report, which concluded that the Department lacks a sufficient basis for evaluating health and environmental risk. We intend to change that.

As I stated earlier in my testimony, I recently initiated a comprehensive effort to develop better tools, and independent methods for evaluating health risks. The Department is in the process of creating a comprehensive review team that will identify the long-term health and environmental risks at our major sites and facilities. This should lead to a better understanding of the risks at the Department's facilities and will enable the Department to reach out to the academic and public health communities, States, regulators, citizens, Indian tribes, and other stakeholders for input that will greatly improve our decision making. Decisions can then be based on a broad understanding of risks along with other considerations such as statutory mandates, anticipated land use and associated costs, technical feasibility and cultural values, worker health and safety, and environmental equity.

We intend to complete a comprehensive survey of immediate exposure risks in fiscal year 1994. At the same time, we will be developing appropriate analytical tools for evaluating long-term risk as well as identifying specific data needs. These efforts should be completed in fiscal year 1995.

As I said earlier, on November 3 and 4, 1993, the National Research Council of the National Academy of Sciences conducted a workshop to review risk management in the Department's Environmental Restoration and Waste Management program. This workshop was a big step in our effort to come up with the necessary, credible, scientifically based risk evaluation program to define, on a site-by-site basis in a meaningful way, the major long term product and health and environmental risks at our sites. The National Academy of Sciences is also undertaking a 24 month study on risk characterization that I think will be of great interest to us.

I will share some of the specific details and milestones of the Department's effort with you in a moment. We have begun an effort to collect new data and break new ground, and we need to fully involve citizens and appropriate institutions in this process. We have to establish new institutional mechanisms because the government entities with the money (DOE, EPA) don't have the credibility to conduct the assessments. We need a unique institutional framework that is credible, not owned by us, able to relate to the stakeholders, able to act in a timely manner, and able to integrate knowledge in these 2 years. This is not just because it is needed and a good idea but it is also driven by Congressional directive.

As I stated in remarks to the National Academy of Sciences on November 3, I envision a unique set of institutional mechanisms. We are looking at several options: university consortium, public interest organizations, established laboratories, nationally known organizations. Resources would be managed by a DOE Headquarters risk group comprised of 3 or 4 people. They would provide oversight and make sure the dollars get where they are supposed to go. From there, site by site analysis, using a common methodology, would be executed by credible institutions near the sites or having functional expertise. I also envision appointing a Blue Ribbon panel at the local and national level comprised of recognized experts with local groups advising.

The point is to assign the resources to institutions that have credibility. The Department of Energy needs to give up control and be willing to live with the consequences of what independent information provides.

Some of the questions we need to keep asking ourselves during this effort are:

—Are we doing what the public wants us to do? The only way to find out is to lay on the table what the problems are and let the public review the information and guide us.

—What is the cost/benefit ratio of our investment?

—How can we best work with Congress and States to determine how fast we should move on the risks we identify? We all agree that the risks need to be remediated. But, if they are not pressing to the workers, the community or public health, should they be pushed back until more cost effective technology is available?

Our objective is to produce credible risk estimates that can serve as a useful basis for working with regulators and the public and for managing our program cost effectively. This cannot simply be a traditional, "by the book" set of risk assessments derived from calculations from others. This would not be credible because the data in terms of past and present exposures is not available and there is no consensus on modeling methods. Also, regulators and the public demand to be part of the process—from developing models to inputting data. Furthermore, we have not yet factored into the dialogue discussions on future land use need to do so.

The Office of Technology Assessment recently published another report, "Hazards Ahead," documenting the shortcomings of the Department's worker health and safety protection efforts. Secretary O'Leary has lauded this effort as an excellent report that provides a blueprint for how to proceed to correct the problems. I fully support the Secretary's view and regard worker health and safety as one of my top priorities. We simply must do better.

VI. SPECIFIC MILESTONES IN THE DEPARTMENT'S TWO-YEAR EFFORT

Our effort to develop meaningful risk evaluation is on a rigorous timetable.

The following are the milestones I have established:

—December 1993: Recruit and select a leader for the proposed oversight group.

—December 1993: Identify an institution or contractor and have the system up and running.

—January 1994: Report from the National Academy of Sciences as a follow-up to the workshop last week.

—March 1994: Incorporate the proposed institutions in the field.

—January 1995: Complete first draft assessments.

—June 1995: Preliminary report to Congress.

This will be followed by inclusion of the final report in DOE's fiscal year 1997 budget package which will go to Congress in January of 1996. I expect to have results presented in the fiscal year 1998 budget package, the year the costs are expected to hit the system.

VII. CONCLUDING SUMMARY

This risk evaluation effort needs creativity and judgment and the application of lessons learned. If we do it right, this is yet another place where we can turn a massive problem into an opportunity. We plan to focus on a limited set of facilities so that, by producing meaningful results at some sites, we'll have success that can be applied elsewhere and a real world laboratory for innovation. Our success can then advance the process dialogue with the communities for other DOE sites.

By 1997, we must have a stronger basis for knowing how to apply our resources so that we can seriously and successfully discuss how we want to approach these issues. The current approach is to lay out all of the problems and try to attack them en masse in as orderly a fashion as possible. If we can't establish a good risk-based approach, we could be forced back into this default position. I truly think that a risk-based approach is the way to go.

I'd like to close with a quote from Pericles that I think is right on the mark:

We Athenians . . . take our decisions on policy or submit them to proper discussion: for we do not think there is an incompatibility between words and deeds; the worst thing is to rush into action before the consequences have been properly debated. And this is another point where we differ from other people. We are capable at the same time of taking risks and of estimating them beforehand. Others are brave out of ignorance; and when they stop to think, they begin to fear. But the man who can most truly be accounted brave is he who best knows the meaning of what is sweet in life and what is terrible, and then goes out to meet what is to come.

Thank you, Mr. Chairman, for the opportunity to share my thoughts on risk evaluation with this committee today. I look forward to working closely with you as we proceed in our 2-year effort to establish and implement meaningful risk evaluation at the Department of Energy.

Mr. SWIFT. I would be happy to welcome Dr. Lynn Goldman who is Assistant Administrator for Prevention, Pesticides, and Toxic Substances at the EPA.

Dr. Goldman.

STATEMENT OF LYNN GOLDMAN

Ms. GOLDMAN. Thank you.

Mr. Chairman and members of the subcommittee, I am pleased to have the opportunity to testify before you today on the topic of legislation regarding risk decisionmaking on behalf of the Environmental Protection Agency.

I am accompanied here today by Dr. William Farland, who is the Director of the Office of Health and Environmental Assessment in EPA's Office of Research and Development.

As requested by the committee, my testimony today covers both general points about House bills H.R. 2910 and H.R. 3111, and remarks about the science of risk assessment. I believe that the discussion of the matters addressed in the bills is timely and extremely important for improving health and environmental risk decisionmaking.

As the EPA examines these issues, we will keep in mind several principles that have been articulated by Administrator Browner: the importance of using good science and environmental regulation, the need to address environmental justice issues, the need to create better partnerships with States and local communities, the need to provide the flexibility that States and local communities require in order to achieve the standards that we would like to see them achieve, and the need to bring together the goals of environmental protection and a good economy.

I would like to note that the White House has convened an interagency working group to look broadly at risk policy issues including risk-related provisions of various legislative proposals. The administration is hoping to develop more consistent approaches to risk analysis across Federal agencies responsible for protecting public health and the environment.

In examining the bills' provisions and discussing the risk assessment process, it is helpful to keep in mind the distinctions between risk assessment, risk management, comparative risk analysis, and risk communication. I will be using some figures that are posted on the easel during the presentation to help illustrate some of these distinctions.

EPA, like many other Federal agencies, has adopted a paradigm that was established by the National Academy of Sciences in 1993 in a report entitled, Risk Assessment in the Federal Government, Managing the Process.

A major recommendation of the report of the National Academy of Sciences was to distinguish the scientific assessment of the risk from other elements of regulatory decisionmaking or risk management, such as legislative requirements, technological feasibility, social values, and economic impact analysis.

On the poster board we can see some of the factors that go into these two distinct undertakings. Risk assessment involves looking at questions such as the nature of effects, the potency of the agent, the exposures that might occur to the population at risk, and then the risks to various populations.

We may not just be concerned about the average of the population of 250 million people in the country, as the upper 10 percent is 25 million people. We might also be concerned about high-end exposures that might occur to those 25 million individuals.

There are uncertainties in the science and uncertainties in analysis that not only need to be taken into account, but also need to be made very clear in the reports that are written on the risk assessments. This is a process of identifying, describing, and measuring. It is basically a scientific process.

Risk management on the other hand involves not only looking at the scientific assessment, but also the social importance of the risk, coming to some determination about what level of risk would be determined by society to be acceptable, which is not a scientific question. Then too, there are questions about whether or not to reduce the risk, even how far to go in terms of making that kind of reduction, questions of economics and economic viability, both in the short and the long-term, and of course questions about various legislative and legal issues as well as the perception of the people who are exposed to those risks, which is, I don't have to inform Members of Congress, a very important consideration in decisionmaking.

So this is really an issue of evaluating and deciding and implementing programs in order to actually manage the risk. These distinctions we think are important because they allow us to be able to separate the scientific endeavor which should not be prejudiced toward various economic and social concerns from the risk management endeavor which, as you enter more into the policy arena, may be very much prejudiced towards those kinds of concerns as these choices, which are very tough choices, are made.

Comparative risk analysis is an analysis that attempts to involve a scientific method to set priorities. It asks the question, what are the most important environmental priorities, recognizing that limited resources need to be applied as rationally as possible to address the most important problems first. On the poster board again we have some of the elements that might go into a comparative risk analysis. The issue here is that there are a number of scientific concerns we are trying to compare maybe to various different kinds of health risks, like how do you compare reproductive risks versus cancer risks, how do you weigh these? It is very difficult to do that.

Then we get into ecological risks and determination of those and if you are doing a comparative assessment, you may need to compare a certain impact in terms of cancer risk with another impact that might be a risk to ecosystems. It is very difficult to do this.

We have short and long-range considerations that go into that kind of determination and other sciences such as economics come into any kind of consideration of comparative risks. It is clear there is a general view among many national policymakers that it is time to reexamine the overall national environmental agenda to consider what priorities should be and to make sure that limited resources are directed at problems in a manner commensurate with their relative importance. The administration's executive order on regulatory planning and review commits us to such a viewpoint.

In addition to the general good sense justifying the goal of effective use of resources, there are acute concerns at all levels of government about the effects of the accumulating weight of environmental responsibilities with limited budget revenues. The EPA has been in existence for 23 years. In that time it has acquired piecemeal a large number of statutory mandates across a very large number of environmental programs. The result for EPA has been regulatory programs with different levels of flexibility and different risk and cost analyses to consider. As the Agency found in its Unfinished Business report completed several years ago, and later in the EPA Science Advisory Board Report, Reducing Risk, the overall result of accretion of mandates of different kinds has been that the national and EPA investment in environmental protection may not be in accord with the priorities one would arrive at on a relative risk basis across broadly defined environmental program areas. This is not surprising, given the fact that these statutes were enacted over a period of two decades and have a number of jurisdictions in Congress.

Both H.R. 2910 and H.R. 3111 appear to assume that better analysis, or formal advisory committees on agenda setting, will automatically have the effect of setting a good environmental agenda and optimizing risk reduction per dollar invested, but I believe this goal may be difficult to achieve. In sorting out national priorities, we need to go beyond just improving risk assessments for individual decisions. The fact that existing statutes with mandatory actions and schedules and findings will continue to drive the agenda and the stringency of action has to be kept in mind.

In my written testimony, there is a table which you may also have here, that gives a number of the statutory mandates that we have at the Agency, and the kinds of risk assessment findings that are allowable to be used as part of the decisionmaking, as well as, the kinds of regulatory options that we have, and it is just not surprising that over time the different statutes have given us different requirements with different degrees of flexibility.

The President has begun to address some of these issues in the recently released Executive Order that I mentioned before. The order will require each agency to base its decisions on the best reasonably available scientific, technical, economic and other information concerning the need for and consequences of intended regulations. Considerations such as flexibility, government cost of enforcement, and compliance and distributive impacts, and equity are to be included.

Many provisions of H.R. 2910 address desired attributes of risk assessments that are in accord with existing EPA guidelines. Likewise, H.R. 3111 requires publication of guidelines that EPA already publishes. For example, both of these call for consideration of negative as well as positive toxicological study results, presentation of assumptions and uncertainties and risk descriptors for the average risk as well as high-end risks.

We believe that this is the direction that the Agency has already moved in to address some of the criticisms of past practices where there really was often an insufficient characterization of the full risks.

I would like to point out also the recently released exposure assessment guidelines that the EPA put out that dual presentation of central tendency risk estimates as well as high-end estimates, and much more quantitative uncertainty analysis and presentation of the uncertainties.

Having spent my professional career in the field of public health, I am keenly aware of risks to health in the environment posed by pollution and the need to aggressively move to reduce risks in a manner that maximizes net benefit to society.

For this reason, I welcome the opportunity to work with the committee to develop legislation that will enhance the role of science in setting meaningful risk-based priorities especially in this time of limited resources at all levels of government.

Thank you for the opportunity to testify today. I would be pleased to answer any questions.

Mr. SWIFT. Thank you very much, Dr. Goldman.

[Testimony resumes on p. 39.]

[The prepared statement and attachments of Ms. Goldman follow:]

STATEMENT OF
LYNN GOLDMAN
ASSISTANT ADMINISTRATOR
FOR
PREVENTION, PESTICIDES AND TOXIC SUBSTANCES
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON TRANSPORTATION AND HAZARDOUS MATERIALS
COMMITTEE ON ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES

November 17, 1993

Mr. Chairman and members of the Subcommittee:

I am pleased to have the opportunity to testify before you on the topic of legislation regarding risk decision making on behalf of the Environmental Protection Agency. I am accompanied today by Dr. William Farland, Director of the Office of Health and Environmental Assessment in EPA's Office of Research and Development.

As requested by your letter, Mr. Chairman, my testimony today covers both general points about House bills H.R. 2910 and H.R. 3111 and remarks about the science of risk assessment. I believe discussion of the matters addressed in the bills is timely and extremely important for improving health and environmental risk decision making.

In my testimony today I will discuss a definition of terms essential to commenting on proposed bills, the goals of the proposed legislation, and the areas of current agency risk assessment that are covered by the legislation; and highlight where I believe excessive legislative dictates may inhibit the application of new and emerging science in the future. I would like to note that the White House has convened an interagency working group to look broadly at risk policy issues, including risk-related provisions of various legislative proposals. This group, led by

John H. Gibbons, the President's Science Advisor, and Sally Katzen, the Administrator of OMB's Office of Information and Regulatory Affairs, is examining broad policy considerations with respect to assessing and managing risk. The Administration hopes to develop more consistent approaches to risk analysis across Federal agencies responsible for protecting public health and the environment. Finally, I will express EPA's sincere desire to work with the committee in this important area.

DEFINITIONS

In examining the bills' provisions and discussing the risk assessment process, it is helpful to keep in mind the distinctions between risk assessment, risk management, comparative (or relative) risk analysis, and risk communication (figures attached to this testimony illustrate some of the distinctions).

EPA, like many other Federal agencies, has adopted the terminology of the National Academy of Sciences/National Research Council as provided in its 1983 report entitled "Risk Assessment in the Federal Government: Managing the Process". A major recommendation of the report was to distinguish the scientific assessment of risk from other elements of regulatory decision making (risk management) such as legislative requirements, technological feasibility, social values and economic impact analysis. This distinction ensures decision makers and the public that analysis and judgment of the nature and size of risk is governed by scientific principles and policies, and not prejudiced toward particular economic or social outcomes associated with regulatory decisions. This does not mean that there is not communication between risk assessors and risk managers about what the assessment of risk needs to address in order to support decisions. It also does not mean that risk assessment is the only science used in a management decision. Clearly the social sciences and engineering science, for example, contribute greatly to such decisions in terms of assessing the feasibility and acceptability of alternative policies.

Risk Assessment: Risk assessment is a set of tools used to summarize a body of scientific data to inform decisions. The NAS paradigm defines four elements of risk assessment: hazard assessment, dose-response assessment, exposure assessment, and risk characterization. Risk characterization is the presentation of scientific findings and their strengths and weaknesses so that decision makers can understand and use the information effectively, along with other analyses supporting their decisions.

The bases of risk assessment are empirical data and analyses based on general scientific knowledge and accepted principles. These analyses do contain elements of judgment or inference. Technical judgments are based on scientific data such as amounts of intake of food, water, and air. Inferences are drawn about whether, for example, effects seen in animals may occur in humans. As noted in a 1985 NAS publication, the process of risk assessment requires the use of scientific judgement and inferences to bridge gaps in our knowledge. This requirement suggests that, unless we have direct information on risk to exposed populations, we must accept the use of extrapolation techniques.

A major point about assessments of environmental risks, both health and ecological, is that they result in characterizations and predictions about risk. The assessments are as strong or as limited as the quality and depth of data available. EPA's risk assessments are not meant to be estimates of true risk. They are in no way comparable to actuarial risk statements such as annual highway accident statistics. It is thus troubling and misleading when estimates are spoken of or used as though they were the same as actuarial risks. This makes it all the more important that the strengths and weaknesses of the assessment methods and data are explained carefully when the estimates are presented and when they are used. Science does not stand still. As more is learned about the biological effects of environmental contaminants generally and about effects and exposure to a particular contaminant, our risk assessment tools will be updated. At the present time our understanding of biological mechanisms or action of chemicals is growing rapidly. The development of the science of risk assessment must remain flexible in order to progress as knowledge of underlying phenomena improves. As progress occurs, risk estimates will change for individual contaminants. This will be disconcerting to those who have treated estimates as facts, but, in truth, should be understood as part of the evolution of the science and as adding to, not detracting from, the credibility of the science.

Risk Management: How the Agency conducts risk management is, by contrast, less consistent because of the different provisions of the statutes involved. At EPA, findings required for decisions may call for only part of a risk assessment such as the assessment of hazard (Is it a carcinogen under the Delaney clause?), or only an assessment of exposure (Is exposure widespread enough to require industry to perform toxicology tests?) or they may require a full risk assessment. Environmental criteria may be required to be decided on based only on risk assessment, or on hazard identification coupled with identification of best achievable control technology, or on a full risk assessment coupled with cost/benefit analysis. For example, the statutory findings for setting ambient air quality criteria for, say, ozone are based solely on the elements of risk assessment; economic and technology analyses may be used only in considering ways to achieve the criteria, not in setting the criteria. On the other hand, emission standards for air toxics and effluent guidelines depend on hazard identification and analysis of achievable technology or feasible technology. In still another statutory construct, regulation of risk from existing chemicals under the Toxic Substances Control Act and the Federal Insecticide, Fungicide and Rodenticide Act requires balancing risk reductions against economic impact of regulation and the risks of substitutes. There are numerous other statutory constructs governing regulatory decisions at EPA, requiring still other combinations of analyses. Regulatory risk management therefore has a very broad potential scope. Risk assessment is a component of varying contribution.

Comparative (relative) risk: The purpose of this kind of analysis is to set priorities. It asks the question, What are the most important environmental priorities? recognizing that limited resources need to be applied as rationally as possible to address the most important problems first. Risk assessment is only one piece of this exercise. Because knowledge, data available, and methods used to estimate risk on large numbers of risk problems are very uneven in scope and depth from one problem to the next, comparative risk analyses may be rudimentary and highly subjective as far as the science part goes. The outcome is a social policy analysis based on many complex social and economic choices. Nevertheless, the Administration is committed to broadening the use of comparative risk analyses to help improve risk regulation.

Comparative risk analysis, in projects at EPA, has been used to describe related but quite different processes. The first is the exercise undertaken by EPA in its "Unfinished Business" report and subsequently extended by each EPA regional office, which involved ranking the health and ecological risks and the economic impacts (welfare effects) associated with the broad range of environmental problems that concern EPA. This work was reviewed by the EPA's Science Advisory Board, which added additional perspectives to priorities, particularly in the ecological risk area, and recommended several improvements to the methods.

The second comparative risk process is one that is underway at the state and local government level with support from EPA. The goal of this work is to bridge science and public values so that consensus can be reached on future environmental directions at the state and local level. The work includes public involvement to define public expectations; a ranking of health, ecological and quality of life (economic and social impacts) risks; and a process for developing strategies for acting on agreed environmental priorities. A major project of this kind is underway in California, for example.

There are many areas of difficult judgment in a comparative risk analysis, some about science, but even more that engage other technical disciplines and social values. There are difficult balancing judgments to be made about issues such as, for example, comparing the relative importance of species endangerment, groundwater contamination, and cancer risks from pollutant exposure. Issues such as environmental equity and economic impact, and public perceptions come into play at every step. Such expectations of equity, economic benefit and use of environmental resources may vary widely. So, comparative risk assessment, while providing valuable information for policy makers, cannot substitute for the policy making process.

Each of these analyses may be important in making national decisions. It is, however, essential for the integrity of decision making to recognize their different purposes and ingredients. It would be misleading to advertise a comparative risk decision, for example, as being dictated solely by scientific principles. The figures attached illustrate the differences among the three kinds of analyses I have discussed. Provisions of these bills cover topics in each of the areas described above, but usually under the heading "risk assessment", which is confusing. Whatever terminology is chosen should be carefully defined in the bills.

Risk Communication: This communication occurs at many levels and for many purposes. The subject and its difficulties have given rise to a sizeable literature and number of studies. The follow remarks by Cohrssen and Covello, who have studied the subject for many years, capture many of its facets:

> Scientific information about health and environmental risks is communicated to the public through a variety of channels, ranging from warning labels on consumer products to public meetings involving representatives from government, industry, the media, and the general public. These communication efforts can be frustrating for both risk communicators and for the intended recipients of the information.... Government officials, industry representatives , and scientists often complain that laypeople do not accurately perceive and evaluate risk information. Representatives of citizen groups and individual citizens are often equally frustrated, perceiving risk communicators and risk assessment experts to be uninterested in their concerns and unwilling to take actions to solve seemingly straightforward health and environmental problems. In this context, the media often serve as transmitters and translators of risk information.... But the media have been criticized for exaggerating risks and for emphasizing drama over scientific facts.[1]

This quote is provided to illustrate the complexity of risk communication, which many here today have personally encountered. It also makes the point that risk communication is much broader than simply a thorough explanation of a risk assessment.

OBJECTIVES OF THE BILLS

It is clear that there is a general view among many national policy makers that it is time to reexamine the overall, national environmental agenda, to consider what priorities should be, and to make sure that limited resources are directed at problems in a manner commensurate with their relative importance. The

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[1] Cohrssen , J.J. and Covello, V.T. (1989) Risk Analysis: A Guide to Principles and Methods for Analysing Health and Environmental Risks. United States Council on Environmental Quality. NTIS Order No. PB 89-137772.

Administration's Executive Order on Regulatory Planning and Review (E.O. 12866) commits us to such a viewpoint. This goal is, in fact, the announced purpose of H.R. 3111. But H.R. 2910 merges broad management concerns with the more narrow features of risk assessment. In addition to the general good sense justifying the goal of effective use of resources, there are acute concerns at all levels of government about the effects of the accumulating weight of environmental responsibilities with limited budget revenues. Unfunded Federal mandates have been, delegated to state and local government over time, as new or revised Federal statutes have created them, without real attention to their cumulative impact.

The EPA has been in existence for 23 years. In that time, it has acquired, piecemeal, a large number of statutory mandates across a very large number of environmental problems. If one looks back at this history, one can see a number of different paradigms for environmental decision making. In the first statutes, the aim was to define national criteria for clean air and water, broadly based on ubiquitous effects on public health and the environment, and to require states to take measures to meet the criteria. The next statutes were aimed at finding and nationally regulating unreasonable risks posed by sources or products to individuals and populations, considering cost/benefit analysis. The statutes that came next had regulatory schemes of various sorts including public health criteria in some, and technology-based criteria in others. Most recently, the Agency is expanding efforts in the area of pollution prevention which seeks to employ safer technologies and substitries to reduce unwanted, harmful pollution. The result for EPA has been regulatory programs with different levels of flexibility and different risk and cost analyses to consider. As the Agency found in its "Unfinished Business" report completed several years ago, and later in the EPA Science Advisory Board report "Reducing Risk", the overall result of the accretion of mandates of different kinds has been that the national and EPA investment in environmental protection is not in accord with priorities one would arrive at on a relative risk basis across broadly defined environmental program areas. This is not surprising given the fact that these statutes were enacted over a period of two decades and have a number of jurisdictions in Congress.

Another aspect of history to note is that the first statutes assumed that the toxic contaminants released into the environment were few in number and, therefore, would be relatively inexpensive to remove. The recognition over the years that the number of environmental contaminants with some potential adverse effects at environmental levels is in the hundreds presents a quite different picture than the one originally assumed, and the achievement of "no adverse effect" levels for all of them is very costly.

It may well be time to take an overall look, and to analyze the odd mixture of findings of varying stringency in various statutes to see if, in sum, their effect is to invest resources effectively, not only at the Federal level, but perhaps even more at the state and local level. Since the various statutes respond to the question, What is an acceptable risk? with answers ranging from "zero" to "a risk too costly to reduce", they result in cleanup investments that are inconsistent and may or may not be in desirable proportion.

Both H.R. 2910 and H.R. 3111 appear to assume that better analysis, or formal Advisory Committees on agenda-setting, will automatically have the effect of setting a good environmental agenda and optimizing risk reduction per dollar invested. I believe that this goal may be difficult to achieve.

I am concerned that the aim of sorting out national priorities and changing the considerations used in risk decisions uniformly cannot be achieved by simply improving risk assessments, or even by just requiring certain analyses in all decisions. The effect would be to drain the resources and time of EPA programs into performing analyses that are inconsistent with existing statutes and to cause confusion about which decisions are science based, and which are not. A program manager at EPA must have some discretion to rank priorities within his or her program, but there is often a statutory list of pollutants that must be regulated on a defined schedule with little or no discretion to decide, or take the advice of an advisory committee, that an individual pollutant does not present a risk that justifies regulation. The fact is that existing statutes with mandatory actions and schedules and findings will continue to drive the agenda and the stringency of action. One example will suffice. An ambient air quality criterion for ozone is set under the Clean Air Act by judging the health impact associated with exposure as revealed by a risk assessment. H.R. 2910 would require both a substitutes analysis and a relative risk analysis to be part of all risk assessments. What would be the role of these analyses in setting an ozone criterion given the statutory requirements? The agency would have no statutory authority for using the results of these analyses in setting the criterion. The potential cost and time required for performing the analyses would be large. The question of whether they were adequately done would inevitably be litigated, as would the question of whether they were intended by Congress as simply informational exercises or were to be used in some way in decisions. Similar situations would arise under virtually every statute. This is not to say that comparative risk and other analyses are not valuable in themselves; they do add valuable perspectives for decision makers, when broadly cast.

If the time has arrived to take an overall look at environmental management, then the executive and legislative branches should undertake this directly.

The President has begun to address some of these issues in the recently released E.O. 12866. This order directs that "[i]n setting regulatory priorities, each agency shall consider, to the extent reasonable, the degree and nature of the risks posed by various substances or activities within its jurisdiction." The order also requires each agency to base its decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation. Considerations such as flexibility, government cost of enforcement and compliance, and distributive impacts and equity are to be included.

PRINCIPLES OF RISK ASSESSMENT

Many provisions of H.R. 2910 address desired attributes of risk assessment that are in accord with existing EPA guidelines. Likewise, H.R. 3111 requires publication of guidelines that EPA already publishes. For example, both H.R. 2910 and EPA guidelines call for consideration of negative as well as positive toxicological study results, presentation of assumptions and uncertainties, risk descriptors for average as well as high-end risks for both population and individual risk estimates. The idea is to give decision makers as full a picture as possible of outcomes along with the strengths and weaknesses of analyses.

Both bills also seek to address criticisms that EPA's assessments have emphasized high-end, conservative approaches in the past with insufficient characterization of the full picture. The EPA has recognized these problems. We have been working to correct this through announcing new principles such as those in our exposure assessment guidelines published in 1992, and in other upcoming revisions to guidelines, and changing our practices. For example, the guidelines call for presentation of central tendency (average) of risk estimates as well as high-end estimates for sensitive or more highly exposed portions of a population; they also call for much more quantitative uncertainty analysis and presentation. The working group on risk assessment convened by OMB's Office of Information and Regulatory Review is also looking at these issues. However, putting the new principles into place is not an overnight undertaking and has not by any means been finished. There are many methods for uncertainty analysis, for example, to be developed and learned. Moreover, it is beyond our means to re-do retrospectively our entire catalogue of risk assessments.

There is an upcoming report that the Congress should anticipate. The National Academy of Sciences (NAS) was commissioned by the EPA in 1991, as directed by the Congress in the Clean Air Act Amendments of 1990, to make a study of risk assessment methods used at the EPA and report the results to the Congress. This report to Congress is imminent. The report is extensive (more than 600 pages) and cost about $900,000 in appropriated funds. It deserves the attention of the Congress before legislation on risk assessment is considered. I urge the interested committees of the Congress to seek the testimony of the NAS study participants and of other interested persons who will have views on the recommendations of the report, as well as testimony from the EPA on its intentions to make changes in response to the report, before considering legislation.

POTENTIAL LEGISLATIVE PITFALLS

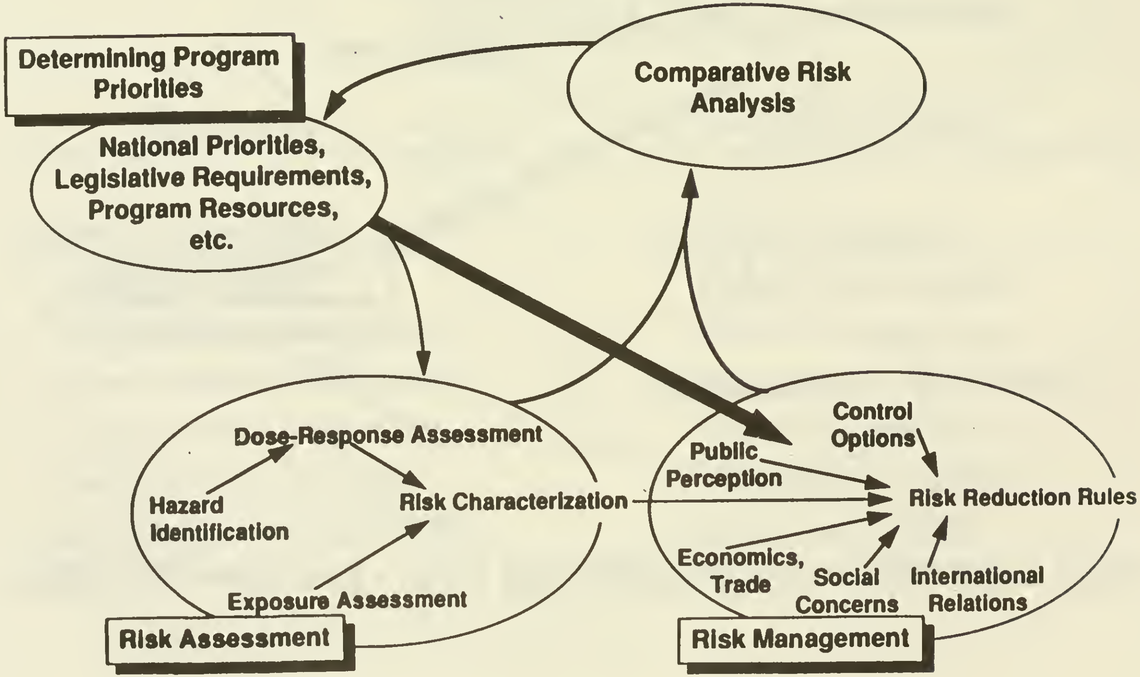
Legislation that makes requirements for the conduct of scientific analysis in risk assessment inherently carries the danger of freezing the progress of the science. Whether the outcome will make sense when viewed in the context of the state of science in 10 or 15 years is questionable. Views of the role of risk assessment may change also. The science of risk assessment is young and developing; it develops by assimilating new learning from the basic sciences and changes in an iterative fashion, replacing old methods with improved ones. If this development is taken out of the hands of scientists and put into the hands of courts trying to interpret the terms of legislation, the components of risk assessment will inevitably acquire legal definitions as opposed to scientific definitions. This will freeze the science by making change impossible in the absence of new law.

As pointed out above, existing environmental laws contain explicit, required findings and criteria. These dictate the considerations that may and may not be allowable parts of regulatory decisions. In some cases, full risk assessment is involved, in others it is not. Substitutes analysis is required in only two statutes currently. In no statute is comparative (relative ranking) risk analysis explicitly included, although it has been done at EPA on numerous occasions. The discretion of the Administrator to consider such general perspectives about environmental priorities in an individual decision is variable and limited. If layers of analyses are added across the board for all decisions, there are two potential conflicts that will arise with existing statutes. One is the significant delay and expense of doing analyses that are not statutorily permitted to be used, or do not make sense in some decisions. A second is the potential for litigating the conduct of such analyses and the intent of Congress in requiring them.

CONCLUSION

Having spent my professional career in the field of public health, I am keenly aware of risks to health and the environment posed by pollution and the need to aggressively move to reduce risks in a manner that maximizes net benefits to society. For this reason I welcome the opportunity to work with the committee to develop legislation that will enhance the role of science in setting meaningful risk-based priorities especially in this time of limited resources at all levels of government. Thank you for the opportunity to testify today. I would be pleased to answer any questions you may have.

Risk Assessment - Risk Management - Comparative Risk



Determining Program Priorities

National Priorities, Legislative Requirements, Program Resources, etc.

Comparative Risk Analysis

Risk Assessment

Hazard Identification

Dose-Response Assessment

Exposure Assessment

Risk Characterization

Risk Management

Control Options

Public Perception

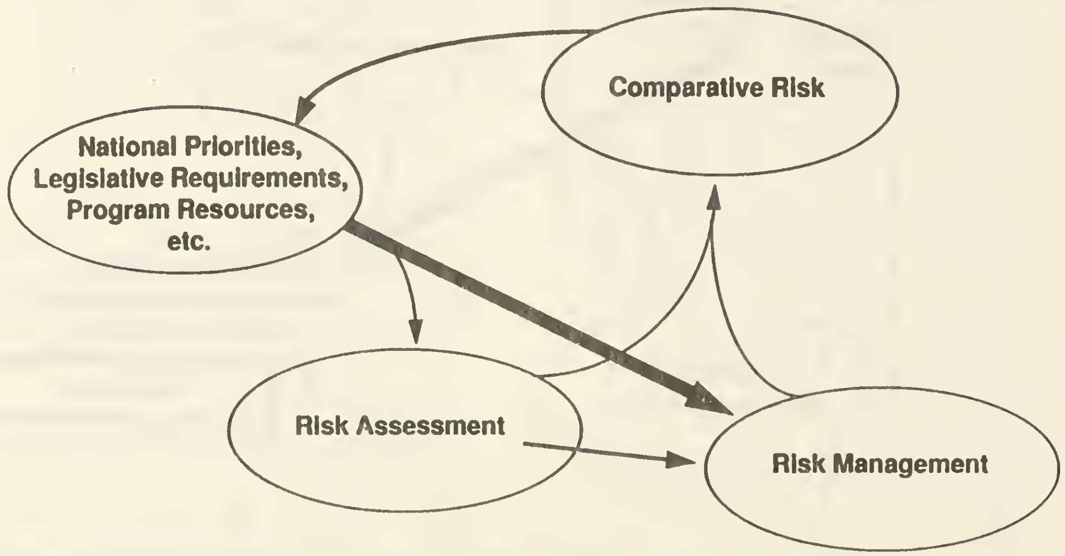
Economics, Trade

Social Concerns

International Relations

Risk Reduction Rules

Risk Assessment - Risk Management - Comparative Risk


Comparative Risk
National Priorities, Legislative Requirements, Program Resources, etc.
Risk Assessment
Risk Management

COMPARATIVE RISK
Fields of Analysis

Science

Effects Compared

- Health to health
- Ecological to ecological
- Short-term to short-term
- Long-term to long-term
- Voluntary to voluntary
- Involuntary to involuntary

Public Policy

Effects Compared

- Health to ecological
- Short- to long-term
- Voluntary to involuntary
- Global to national
- Economics & trade
- Public perception
- Public values

ENVIRONMENTAL RISK REDUCTION RULES

Fields of Analysis

Risk Assessment

- Nature of effects
- Potency of agent
- Exposure
- Population at risk
  - Average risk
  - High-end risk
  - Sensitive groups
- Uncertainties of science
- Uncertainties of analysis

Identify

Describe

Measure

Risk Management

- Social importance of risk
- De minimis or acceptable risk
- Reduce/not reduce risk
- Stringency of reduction
- Economics
- Priority of concern
- Legislative mandates
- Legal issues
- Risk perception

Evaluate

Decide

Implement

EXAMPLES OF STATUTORY CONSTRUCTS (continued)

PROVISION	SUBJECT	KIND OF FINDINGS	REGULATORY MEASURES e.g.,
CAA §112	National emission standards for hazardous air pollutants	189 pollutants listed based on adverse effects on health or the environment	Maximum achievable reduction in emissions from major sources
TSCA §6	Control of commercial chemical substances and mixtures	Unreasonable risk (economic social, environmental, cost/benefit)	Ban or restrict manufacture, processing, or use
CERCLA §9621	Hazardous waste site clean-up	Persistence toxicity, mobility, and propensity to bioaccumulate, short- and long-term potential for adverse health effects	Site remedial action that is protective of human health and the environment and cost effective (Must attain SDWA goals for MCL if applicable.)

CAA = Clean Air Act
TSCA = Toxic Substances Control Act
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

EXAMPLES OF STATUTORY CONSTRUCTS

PROVISION	SUBJECT	KIND OF FINDINGS	REGULATORY MEASURES e.g.,
FIFRA §3	Pesticide registration	Unreasonable risk (economic, social, environmental cost/benefit)	Restrictions on use
FFDCA §409 Delaney clause	Pesticide tolerances	Carcinogenic in humans or animals	The Delaney clause bars establishment of tolerances in processed foods where §409 applies
SDWA §300g-1(b)	Drinking water contaminant levels	Goal: no known or anticipated adverse effects on the health of persons occur and allowing adequate margin of safety (MCLG)	Define maximum contaminant level (MCL) in drinking water which is as close as feasible to MCLG
CAA §108	Primary air quality standards	Kind and extent of all identifiable effects on public health	Standards to protect public health with an adequate margin of safety

FIFRA = Federal Insecticide, Fungicide, and Rodenticide Act
FFDCA = Federal Food, Drug, and Cosmetic Act
SDWA = Safe Drinking Water Act
CAA = Clean Air Act

Mr. SWIFT. I am happy to recognize Dr. Loehr of the Civil Engineering Department at the University of Texas.

Dr. Loehr.

STATEMENT OF RAYMOND LOEHR

Mr. LOEHR. Thank you, Mr. Chairman and the members of the subcommittee. I appreciate the opportunity to participate in this hearing which, as you have noted, is extremely relevant as the Nation attempts to focus on its major problems and to use available resources effectively.

In the interests of time, I will not go over my written statement which you have kindly entered into the record, but I would like to spend some time offering comments on aspects of the two House bills, H.R. 3111 and H.R. 2910, that are of interest to the committee.

Let me note that in addition to my teaching, research, and administrative responsibilities at the University of Texas, I have chaired the Science Advisory Board of the Environmental Protection Agency for the last 5 years and that, I have had the opportunity to participate in a large number of reviews that have come before the board that have within them components of risk assessment issues, and also had the opportunity and pleasure to cochair the Reducing Risk report that was just referred to, as well as the recent expert panel that produced the part known as Safeguarding the Future, Credible Science, and Credible Decisions, for research and knowledge within EPA.

I would also like to point out that the comments I am presenting today are really based on my activities on the board over the past decade as well as experience obtained from other professional activities. But I am presenting these comments as an individual and not as a member of the board.

Let me make a few comments concerning House bill H.R. 3111. The bill focuses on a continuing effort to identify relative risks to human health and the environment to identify the benefits that result from reducing such risks, and communicating such risks to the public.

All three of these efforts are important and necessary if we are to address the priority problems facing this Nation and to use resources effectively. A key term in the bill is the term relative. There is no bright line or specific value that can be used to determine a universally accepted definition of high risk.

That, as you have heard and you are aware, will be a decision that is going to have to be made at many levels, including in the Congress. But the concept of relative risk is really using a matrix that allows us to distinguish the environmental equivalent of a heart attack from the environmental equivalents of indigestion. There can be a sorting out, a process along the way that allows us to put some relative aspect on some of these problems.

As was pointed out by the opening statements of the Congressmen, there is controversy and there are uncertainties associated with risk assessments and there will always be, but it still remains a viable alternative to establish for the public some of the major differences between the types of problems that we have and to identify the needs for which we should have either local or regional or national or global attention.

Over the last 20 years, and we can go farther back, the Nation has made considerable progress in reducing environmental risks, but the public continues to face a wide variety of environmental risks, not all of which are of equal magnitude or impact. And it is this concept of relative risk that offers an opportunity to determine which problems are more serious on a site-by-site basis or on a broader basis.

The concept of relative risk has value even if there is disagreement about the actual risks and disagreement about the benefits that would accrue if the risks are reduced. There always will be those uncertainties involved, but it is the disciplined, structured approach that occurs as we go through the identification of relative risks that is important, and it is that knowledge communicated to the public that allows a broad understanding of them and their democratic principles involved in the reduction of those relative risks.

As has been pointed out when we identify a large number of environmental risks, it is important that these risks be communicated to the public in a way that presents the uncertainties and assumptions that were used in the risk assessment process and a better understanding of relative risks in general. Another way of saying it is that literally all the parts associated with the process need to be as clear as possible, and the assumptions and uncertainties should be clearly presented and as transparent as they can be all along the process.

With respect to specific activities pointed out in the bill, it is appropriate that the three proposed committees on relative risk, on benefits, and on communication, be congressionally mandated so that they are continuing types of activities. It is also appropriate that the terms of the committee be long enough so that the members are able to learn and participate in a continuing evaluative manner and the bill calls for the longer term members to have terms of 6 years.

The reducing risk report that was referred to earlier helps stimulate discussion on the use of relative risk as a way of focusing on important environmental problems. However, it represented an evaluation of only one point in time. For the concept of relative risk to have a continuing impact, an evaluation of relative risks must be a continuing effort and one at a national level, and H.R. 3111 provides for this continuing effort in a very meaningful way.

The evaluation of relative environmental risks endeavors must be a dynamic effort as called for in these bills. New data will continue to be developed which will provide additional insights on emerging as well as current environmental problems. Thus it is appropriate to have careful and frequent reevaluation of relative risks, and such evaluations should be the subject of careful peer review by other respected experts to assure the objective judgment that is really desired.

In the bill, the review of the committee reports is called for by the EPA Science Advisory Board and by the opportunity for public comment. This will provide a considerable appropriate peer review. However, as is consistent with its responsibilities, the Science Advisory Board will review and comment on the scientific information and logic associated with the committee, all the committee's activities and not on the policy implications.

In section 7 of the bill, it calls for a long-term core research program concerning environmental risk assessment research. Such a long-term research program is vital to the objectives and vision identified in the bill. Science support has continually called for long-term research programs on important issues such as this. And without this mandate for a core research program, the available resources will always be diverted to the perceived crisis of the moment.

Section 9 of the bill establishes an interagency panel on risk assessment and reduction. Some sort of an interagency activity is also important and needed. While EPA has major responsibilities for protecting the public from environmental risks, the activities of other Federal organizations also affect environmental risk reduction efforts.

So such an interagency involvement is needed and indeed was encouraged in both the Science Advisory Board's Reducing Risk report and Safeguarding the Future report.

Let me turn now to a few comments concerning H.R. 2910, the Risk Communication Act of 1993. The concepts in this bill are very good. As indicated earlier, it is important that the information about risk assessments and relative risks be clearly communicated to decisionmakers and the public. The bill presents approaches and suggestions in more detail than in H.R. 3111.

And certainly these approaches and suggestions are points to consider as risk assessment and guidelines are developed and relative risks are communicated. However, such encouragements or requirements to undertake the assessment of relative risks or to communicate such risks should not be so proscriptive as to constrain the activities of the Agency or to constrain the use of the risk information.

Let me close by noting that these bills recognize that EPA has broad responsibility for protection of human health and the environment. It is more than just a regulatory Agency enforcing laws passed by Congress. This broad responsibility frequently is overlooked by those who only see EPA as passing laws or enforcing regulations.

EPA is involved in pollution prevention and education and communication. These bills will allow EPA to obtain and provide knowledge that is very important to this country, knowledge about current and potential environmental risks, about the relative magnitude of such risks, and the benefits of reducing such risks.

When that knowledge is communicated to the public, I am confident that there will be sound decisions made about how to focus on the more important problems and the appropriate utilization of the resources that this country has.

Thank you, Mr. Chairman.

Mr. SWIFT. Thank you very much, Dr. Loehr.

[The prepared statement of Mr. Loehr follows:]

STATEMENT OF DR. RAYMOND C. LOEHR, H.M. ALHARTHY CENTENNIAL CHAIR AND PROFESSOR, DEPARTMENT OF CIVIL ENGINEERING, UNIVERSITY OF TEXAS

Mr. Chairman and members of the subcommittee, I thank you for the opportunity to testify today on the subject of environmental risk assessment. This topic is extremely relevant as the Nation attempts to focus on its major problems and use available resources effectively.

I am a professor in the Civil Engineering Department at the University of Texas (UT) at Austin as well as the Head, Environmental Solutions Program (ESP) in the College of Engineering at UT. ESP is a multidisciplinary university and industrial research program that focuses on technologies that can help avoid, treat, or remediate environmental problems. My technical expertise is in the area of industrial and hazardous waste management, particularly the remediation of contaminated soils and sludges. In 1983, I was elected to the National Academy of Engineering.

In addition to my teaching, research and administrative responsibilities at The University of Texas, I also have chaired the Science Advisory Board (SAB), U.S. Environmental Protection Agency (EPA) during the period of October 1988 through November 1993. Over the years, I have participated in a great many SAB activities, each designed to provide sound scientific and technical advice to the EPA Administrator. Relevant to the topic of this hearing is my involvement as co-Chair of the SAB Committee that produced one of the SAB's most important and far-reaching reports: Reducing Risk: Setting Priorities and Strategies for Environmental Protection (1). In addition, I also was Chair of the recent Expert Panel that evaluated the role and quality of science at EPA. The report produced by that Panel was Safeguarding the Future: Credible Science, Credible Decisions (2).

The comments presented today are based on my activities and involvement with the SAB over the past decade as well as on experience obtained from other professional activities. However, I present these comments as an individual and not as a member of the SAB.

As noted earlier, in 1990, the SAB completed the Reducing Risk report (1) for EPA Administrator William K. Reilly. Mr. Reilly asked the SAB to undertake this effort because it was an opportune time to focus on the considerable progress that had been made on environmental problems and to look ahead at the existing and future challenges. It was appropriate to consider the following important questions: a) is the Nation applying the best strategies to address priority environmental problems? and b) is the Nation effectively using its resources to achieve the greatest possible benefits to human health and the environment?

Several facts have become very clear in the past few years. One is that the type of environmental problems facing this Nation and the world now and in the future are different than those that were obvious several decades ago. Another is that human and economic health are inextricably linked to environmental and ecosystem health. A third is that environmental policy must be guided by sound knowledge and science. A fourth is that neither this nor any other Nation has enough resources to address all social and environmental needs. A fifth is that costs and burdens of environmental regulations are increasing noticeably.

The Reducing Risk report noted that the environment is an integrated whole and thus environmental protection efforts should be integrated as well. In this case, integration means assessing the range of environmental problems and then targeting protective efforts at problems that seem to be the most serious.

The concept of relative environmental risk can help foster targeted environmental protection efforts. Every human activity poses some possibility of harm to human health, the ecology, the economic system, or the quality of human life. That is, each activity poses some environmental risk. Risk assessment is the process by which the form, dimension, and characteristics of that risk are estimated. Risk management is the selection and implementation of the approach by which the risk is reduced.

The concept of relative environmental risk, together with its related terminology and analytical methodologies, helps people discuss disparate environmental problems with a common language. It allows environmental problems to be better and compared, and it allows different risk reduction options to be evaluated from a common basis. The concept of relative environmental risk can help the Nation develop environmental policies in a consistent and systematic way. In doing so, the concept allows national resources to be used effectively.

There are important costs involved if society fails to set environmental priorities based on relative risk. If finite resources are expended on lower priority problems at the expense of higher-magnitude risks, then society will face the higher risks. If priorities are established based on the greatest opportunities to reduce relative risk, total risk can be reduced in a more efficient way, lessening threats to both public health and local and global ecosystems.

The key word in the above comments is "relative". There is no "bright line" or specific value that can be used to determine a universally accepted definition of "high risk." There are many uncertainties and assumptions that are inherent in the calculation of a risk estimate. In addition, there are important social, political, and personal value factors that should and do influence public health and environmental decisions. This is a democratic society, and democratic principles and public interests will always be important as decisions are made about the type and magnitude of risks that need government control.

Risk is a common metric that allows the environmental equivalents of "heart attacks" to be distinguished from "indigestion". Despite the inherent uncertainties in—and continuing controversies over—how to assess risk, risk assessment remains one of the best relative indicators of major environmental problems that need governmental attention. It is possible to use relative risk evaluations and estimates to stimulate a dialogue on and a better understanding of the environmental risks that require focused local, regional, national, and/or global attention.

A risk-based approach can be successful only if it is supported by sound science. Many important factors shape national priorities and policies but science can contribute much-needed coherence, order, and integrity to the often costly and controversial decisions that must be made.

Although much careful scientific analysis and judgment goes into the development of scientific risk assessments, significant information often is omitted as the results of the assessment are passed along in the decisionmaking process. Often, when risk information is presented to the ultimate decisionmaker and to the public, the results have been reduced to a point estimate of risk. Such point estimates do not fully convey the range of information considered and used in developing the assessment. Informative risk characterization must include the scientific uncertainties and basis for a risk evaluation and assessment.

Reliable data are available for many aspects of a risk assessment. However, scientific uncertainty is a fact of life for the risk assessment process. As a result, scientific assessments are less certain than the ideal. However, risk evaluations can be used in a relative sense in an attempt to find and focus on the more important problems, i.e., the "worst first".

The Reducing Risk report (1) helped stimulate discussion on the use of relative risk as a way of focusing on important environmental problems. However, it represented an evaluation at one point in time. For the concept of relative risk to have the important impact that is needed, an evaluation of relative risk must be a continuing effort and an effort at the national level.

The evaluation and ranking of relative environmental risks must be a dynamic effort. New data continue to be developed which provide additional insights on emerging as well as current environmental problems. Thus, it is appropriate to have a careful and frequent re-evaluation of relative environmental risks. Such evaluations also should be the subject of careful peer review by other respected experts to assure the objective judgment that is desired.

This calls for developing scientifically sound relative risk assessments of diverse factors and conditions that can adversely affect human health, welfare, and ecological resources. This is a challenging, even daunting effort. But, however daunting, complex, and difficult such efforts appear, they should be pursued. The goal is important to society—protection of human health and the environment and the appropriate use of available resources.

The Nation has made progress with such protection. However, the public continues to face a wide variety of environmental risks, not all of which are of equal magnitude or impact. The concept of relative risk offers an opportunity to determine which environmental problems are the more serious.

In determining the more serious environmental problems, it is important that the evaluation and ranking of relative risks to human health, welfare, and ecological resources be performed by technical experts free from interests that could bias their objective judgment. To better evaluate and more appropriately rank environmental risks will require better scientific information in the future than we have now. It also will require careful evaluation of such information, perhaps using different evaluative frameworks and relationships than those that currently exist. The efforts of many disciplines, such as statisticians, epidemiologists, ecologists, engineers and other scientists will be needed. The resulting reports and documents must be credible, understood, and able to support decisions.

When relative environmental risks have been evaluated, it is important that these relative risks be communicated to the public in a way that presents: a) the uncertainties and assumptions that were used in the risk assessment process, and b) a better understanding of environmental risks in general. To the extent possible, a format of presentation should be developed that is informative and consistent.

The availability of relative environmental risk assessment information will: a) allow important uncertainties and data gaps to be identified, providing a focus on studies and evaluations that can help reduce the uncertainties and provide needed data, b) allow the relative risks to be more obvious to the public and to regulators, c) stimulate discussion on both current and future human health and environmental concerns that need increasing attention, and d) permit national resources (time, energy, people, dollars) to be used on the more important problems.

However, any encouragement or requirements to undertake the assessment of relative environmental risks or to communicate relative risks should not be so prescriptive as to constrain the activities of an agency or the use of the risk information. Assessment and ranking of relative risks is an emerging activity where innovation and better approaches should not be inhibited. In addition, the agency or organization responsible for conducting these evaluative efforts should not be so burdened that its other activities become threatened or limited. Adequate resources should be authorized for such efforts.

It is necessary to obtain a better understanding of environmental risks and to use such an understanding to manage available resources to protect society against the greatest risks. Current legislation and court orders are directive and leave little room for the evaluation of relative risks and the application of resources to reduce the greatest risk.

There needs to be an integration of these concepts into new and amending or reauthorizing legislation developed by Congress. In this way, information on relative risks to human health and the environment developed by agencies and organizations can be used to assure that such legislation does focus on the greatest risk.

Thank you for inviting me to appear today and to share these comments. I will be glad to answer questions you may have.

Mr. SWIFT. And our last witness on this panel is Dr. Michael Gough, who is Program Manager for the Biological and Behavioral Science Program with the OTA, the Office of Technology Assessment.

STATEMENT OF MICHAEL GOUGH

Mr. GOUGH. Thank you, Mr. Chairman. Good morning. Good morning members of the subcommittee.

I am pleased to be here today to describe some aspects of environmental risk assessment and the role that research can play in improving the process. Yesterday, OTA released a report researching health risks that was requested by Mr. Dingell, the chairman of this committee, and Mr. Brown, the chairman of the Committee on Science, Space and Technology.

That report described the research that underpins current risk assessment methods and that develops new techniques. It details ongoing research, where it is being done, and how much it costs. One chapter of the report describes some of the recent breakthroughs in molecular and cellular biology that may greatly improve risk assessment practices.

The report also discusses the importance of science policy assumptions in the practice of risk assessment, and it divides the assumptions into two types. One is assumptions that are used to bridge gaps in scientific knowledge, and two is assumptions that compensate for lack of information about specific substances.

Of those two, the second is easier to describe by an example. There are 75 different dioxins. Scientists have devoted a great deal of effort to understanding the most toxic of those chemicals, but it is impossible to expend the same amount of effort on the other 74. Nevertheless, because of the problems associated with the various combinations of the dioxins in the environment, scientists have devised a method to estimate the risks of those combinations in the absence of direct tests, the toxicity of each of the dioxins or of the combinations.

The other kinds of assumptions have more far-reaching significance. They involve extrapolation from animal test results to predictions of human harm and from effects seen at high exposures either in animals or humans to quantitative predictions of human harm at lower environmental exposure levels.

The assumption that animal tests predict human effects has been generally validated. But some scientists raise questions about its usefulness in specific cases. What interpretation is to be placed on the finding that a substance causes an adverse effect in an animal organ that has no counterpart in humans? The guidelines that the Agency has developed direct the Agency to discount information that runs counter to the assumptions. Without such guidance, every proposed regulation might undergo an even more protracted period of argumentation and contest.

Far more complicated is making quantitative extrapolations from animal test data often gathered at exposure levels 1,000 to 100,000 times higher than environmental exposures downwards to estimates of human risk. Several different extrapolation models can be used for making those estimates, and they can produce risk estimates that vary by factors of 10, 100, 1,000 or more. Without guidance about which model to use, each new regulation could cause consideration of and choosing among all the models. The guidelines specify which model will be used.

Similar policy assumptions are used in making exposure estimates. After gathering the data and using the various models and assumptions, the risk assessors produce a numerical estimate of risk. If the information about hazard comes from epidemiologic studies, the most likely estimate of risk is communicated to the risk managers.

When animal tests are the source of information, the 95 percent upper confidence limit on risk is communicated. That limit is calculated so that the risk assessors can be 95 percent certain that the risk they estimate is not bigger than the best estimate. In other words, it is more likely to be an overestimate than an accurate estimate or a low estimate.

Assessors also state that the lower limit on the risk may include zero. The risk range from near or equal to zero to the 95 percent upper confidence limit is very broad. And it provides risk managers little information for making probabilistic choices among risk levels. In practice, the upper 95 percent confidence level becomes a point estimate that is used in risk management decisions essentially by default.

There is room for improvement in this process. The OTA report argues that risk managers should be in contact with risk assessment researchers, the developers of methods and new approaches.

The report sees the managers, who must apply the results of risk assessment, as becoming aware of where research might reduce reliance on assumptions, highlight quantitative uncertainties, improve the process, and improve public confidence. In that way managers have help in targeting research to where it may have the most impact.

This contact between researchers and users of risk assessment requires risk communication, both from the researchers to the assessors to the managers, and equally important in the reverse direction, from the managers to the assessors and to the researchers.

One of the conclusions from the OTA report is that, "Solving the problems in health risk assessment goes beyond more and better science; it also requires building trust among government, industry, and citizens."

Better risk communication among researchers, assessors, and managers will inform the rest of government, industry, and citizens about the process, the problems, and the opportunities. It will make little difference if the process works to the satisfaction of experts and the decisionmakers, and leaves the public uneasy and wary.

This concludes my prepared testimony. I would be happy to respond to questions.

Mr. SWIFT. Thank you very much.

[Testimony resumes on p. 57.]

[The prepared statement and attachments of Mr. Gough follow:]

Testimony of

Michael Gough
Office of Technology Assessment

Good morning, I am Michael Gough, and I am the manager of the Biological and Behavioral Sciences Program in the Office of Technology Assessment (OTA). I am pleased to be here today to describe environmental risk assessment and some of the opportunities and problems confronted by the practitioners of this relatively new tool for decisionmaking.

I will frame my remarks by reference to two OTA reports, a report from the National Research Council, and several Executive Branch guidelines. Twelve years ago, OTA released a report[1] that described the available methods for assessing cancer risks from environmental exposures. At a time when some observers estimated that the "environment" caused as much as 90 percent of all cancers, OTA pointed out that the word "environment" is used in two very different contexts. In one context, it means everything that humans are exposed to, what people eat, drink, and smoke, drugs and radiation received as part of health care, occupational chemicals and radiation, infectious diseases, and agents in the air, water, and soil. When used in that way, environment is associated with the vast majority of all cancers. But the word environment also has a meaning that is limited to air, water, and soil, in the sense of the Environmental Protection Agency (EPA). When OTA looked at the amounts of cancer associated with those exposures, it estimated that chemicals in the environment, "pollution," were associated with 2 percent of all cancers (with a range of estimates between less than 1 percent and 5 percent), and environmental radiation, including radon and sunlight, was associated with 3 percent of all cancers (with a range of estimates between 2 and 4 percent). Those estimates were closely replicated by EPA[2] 6 years later. The agency estimated that pollution was associated with 1 to 3 percent of all cancers, and that radiation was associated with 3 to 6 percent.

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[1] Office of Technology Assessment. 1981. Assessment of Technologies for Determining Cancer Risks from the Environment. Washington, DC: U.S. Government Printing Office.

[2] Environmental Protection Agency. 1987. Unfinished Business: A Comparative Assessment of Environmental Problems. Appendix 1: Cancer. Washington, DC: U.S. EPA.

What do these percentages mean in terms of numbers of cancers? In 1992, 2.2 million Americans died from all causes, and of those about 520,000 died from cancer.[3] Since all of the estimates of cancer that I have mentioned are based on cancer mortality data, 1 percent of all cancer deaths is equivalent to about 5,000 cancer deaths. Overall, cancer is the second leading cause of death in the United States, and the age-adjusted death rate from cancer has remained nearly constant over the last 60 years; there was no change in that rate between 1991 and 1992, for instance.

Whatever the number of cancers associated with air, water, and soil, the EPA is charged with reducing it. The first step in that overall process is risk assessment, which employs the tools of science to estimate the level of risk posed by various environmental hazards. The 1981 OTA report described the methods then available for estimating environmental cancer risks, and we divided the process into three steps (Fig. 1). Two years later, the National Research Council[4] modified that description and divided risk assessment into four parts (Fig. 2):

> The first step is hazard identification, which can involve laboratory tests or epidemiologic studies, that associates a substance with an adverse health effect. The result of this step is a decision about whether the tested substance is hazardous.
>
> The second step is laboratory tests or analysis of epidemiologic data to estimate a relationship between the dose of the substance and the frequency or severity of the adverse health effect.
>
> The third step is exposure assessment or estimation that provides information about the levels of exposure to the substance.
>
> The last step, risk characterization, at a minimum, combines the information about dose response, often determined in laboratory animals, and human exposures, often based on estimates, to generate an estimate of risks to humans under various exposure conditions. In addition, this step can include a

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[3] National Center for Health Statistics, Centers for Disease Control and Prevention. 1993. Annual Summary of births, marriages, divorces, and deaths: United States, 1992. Monthly Vital Statistics Report 41: (13), Sept. 28, 1993.

[4] National Research Council. 1983. Risk Assessment in the Federal Government: Managing the Process. Washington, DC: National Academy Press.

> discussion of the uncertainties in the tests and estimates and in the methods used to extrapolate from laboratory findings and estimated exposures to the risk estimate.

The NRC separated the risk assessment process from risk management. Risk assessment is a technical process that generates an estimate of risk; risk management is the process that combines the information from risk assessment along with social, economic, and equity concerns to decide whether or not exposures to the substance should be reduced and the level of the reduction.

Although we most often think of risk assessment and risk management as governmental activities, some private companies go through the same processes. Furthermore, some academic experts contribute to the development of risk assessment methods and their applications.

Following release of the NRC report, the Executive Branch, through EPA[5] and the Office of Science and Technology Policy,[6] developed guidelines for risk assessments. The guidelines have been revised periodically, and they have served to instruct both risk assessors and risk managers about the process and interpretation of results.

The NRC report also concluded that the most effective way to improve risk assessment was by improving the quality and comprehensiveness of knowledge that goes into the risk assessment process. Yesterday, OTA released a report, Researching Health Risks, that was requested by Mr. Dingell, Chairman of this Committee, and Mr. Brown, Chairman of the Committee on Science, Space, and Technology. That report describes the research that underpins current risk assessment methods and develops new techniques. It details ongoing research, where it is being done, and how much it costs. One chapter of the report describes some of the recent breakthroughs in molecular and cellular biology that may greatly improve risk assessment practice.

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[5] U.S. Environmental Protection Agency. 1986. Guidelines for carcinogenic risk assessment 50 Fed. Reg. 33992-34006. Reprinted in The Risk Assessment Guidelines of 1986. Washington, DC: U.S. EPA (EPA/600/8-87/045).

[6] Office of Science and Technology Policy. 1985. Chemical carcinogens; a review of the science and its associated principles. 50 Federal Register 10371-10442.

But those improvements depend on risk assessment research bridging the gap from more basic research to risk assessment applications. The report also discusses the importance of science policy assumptions in the practice of risk assessment, and it divides the assumptions into two types:

1. Assumptions that are used to bridge gaps in scientific knowledge.
2. Assumptions that compensate for a lack of information about a specific substance.

Of the two, the second is easier to describe by an example. There are 75 different "dioxins." Scientists have devoted a great deal of effort to understanding the most toxic of those chemicals, but it is impossible to expend the same effort on the other 74. In fact, from relatively simple, and inexpensive studies, scientists know that some of the other dioxins are far less toxic. Nevertheless, various combinations of the dioxins exist in the environment, and scientists have devised a method to estimate the toxicity of those combinations in the absence of direct tests of the toxicity of all of the dioxins or combinations of them.

The other kind of assumption has more far-reaching significance. When I discussed the steps in risk assessment, I was describing processes that involve extrapolations.

For instance, hazard identification that depends on animal tests includes the assumption that animal results predict human effects. That assumption has been generally validated for many effects, but some scientists raise questions about its usefulness in specific cases. What interpretation is to be placed on the finding that a substance causes an adverse effect in an organ of a test animal that has no counterpart in humans? And, many substances cause liver cancer in male mice and female rats, but not in female mice or male rats; moreover, liver tumors are far more common in some laboratory animals than in humans. Should that information be weighed against the assumption when the only evidence for carcinogenicity is liver tumors? The guidelines direct the agency to discount information that runs counter to the assumption. Without such guidance, every proposed regulation might undergo an even more protracted period of argumentation and contest.

Animal tests are used for most hazard identifications, but in some cases, hazard information is available from highly exposed human populations. Two timely examples are asbestos and radon. Shipbuilders and refrigeration workers exposed to asbestos developed asbestosis, a disease unknown in people not exposed to asbestos, mesothelioma, a tumor which has only one known cause, asbestos, and increased rates of lung cancer. Miners exposed to radon on the job had elevated rates of lung cancer. As is now well known, everyone is exposed to asbestos and radon. What is not certain is the level of risk at environmental exposure levels. Both asbestos and radon cause lung cancer at occupational exposure levels, but it has so far proved impossible to measure an increase in that disease from exposure to environmental levels of either asbestos or radon. In absence of that information, risk assessors employ an extrapolation model of some kind to use the information about disease at high exposure levels to estimate the risk of disease at lower levels. Far more complicated is extrapolating from animal test data, often gathered at exposure levels 1,000 to 100,000 times higher than environmental exposures, to estimates of human risk.

Several different extrapolation models can be used for making those estimates, and they can produce risk estimates that vary by factors of 10, 100, 1,000 or more. Without guidance about which model to use, each new regulation could involve consideration of and choosing among all the possible models. The guidelines specify which models will be used, bypassing those arguments. Similar science policy assumptions are used to make exposure estimates.

As is immediately apparent, the use of science policy assumptions introduces some elements of risk management into risk assessment, and the NRC report identified 50 "inference points" that required policy judgments. As an example, the choice of an extrapolation model involves policy judgments. How much prudence should be included in the model? What kind of evidence is necessary to set aside the generally preferred model in favor of another?

After gathering the data and using the various models and assumptions, the risk assessors produce a numerical estimate of risk. If the information about hazard comes from epidemiologic studies, the most likely estimate of risk is communicated to the risk managers. When animal tests are the source of the hazard identification, the 95 percent upper confidence limit on risk is communicated to the risk managers. That limit is calculated so that the risk assessors can be 95 percent certain that the risk is not bigger than the estimate; in other words, it is more likely to be an overestimate than an accurate estimate or a low estimate. The justification for that estimate is the great uncertainty that is involved in the risk estimate, based on animals that may or may not be predictive of the worst effects in humans and the uncertainty in extrapolating from effects at high doses in animals to estimated effects at far lower doses in humans.

When EPA announces its estimate of cancer risk based on animal studies, it states that the lower limit on the risk estimate approaches and can sometimes include zero. That, too, is a reflection of the uncertainty in the risk estimate.

The risk range from zero or near zero to the upper 95 percent confidence level is very broad, and stated in that way, it provides risk managers little information for making probabistic choices among risk levels. In practice, the upper 95 percent confidence level becomes the "point estimate" that is used in risk management decision making, essentially by default.

The OTA report released yesterday agrees with the practice of the last decade that risk assessment and risk management are to be kept separate in making regulatory decisions. But the report argues that risk managers should be in contact with risk assessment researchers, the developers of methods and approaches (Fig. 3). OTA does not see this process as involving managers in particular risk assessments. Instead, it sees the managers as learning from completed risk assessments and risk management decisions where research might improve the process. By conveying that information to risk assessors and risk assessment researchers, the managers can participate in a process to target research where it may have the most impact. As information is developed and validated, policy assumptions and guidelines could be changed to reflect the new information. Only when that process was complete would risk assessments be expected to reflect the new information.

This contact between researchers and users of risk assessment requires risk communication, both from the researchers to the assessors to the managers and in the reverse direction. If assessors provide additional information about the risk estimates, not only the range between zero and the 95 percent confidence level but also information about the probability distribution of the risk, the managers will have a richer set of data and a fuller description of the risk because of the explanations that will be necessary. In the reciprocal direction, risk managers, learning more about the uncertainties in the risk assessment process, will be able to reach back to the assessors and the researchers and tell them what additional information will make their work better.

One of the conclusions from the OTA report is that:

> Solving the problems in health risk assessment goes beyond more and better science; it also requires building trust among government, industry, and citizens.

Better risk communication among researches, assessors, and managers will inform the rest of government, industry, and citizens about the process, the problems, and the opportunities. It will make little difference if the process works to the satisfaction of the experts and the decision makers and leaves the public uneasy and wary. Only with understandable communication about the process can the public decide whether the process satisfies its desire for risk management and risk reduction.

This concludes my prepared testimony. I will be happy to respond to questions and comments.

Figure 1

Risk Assessment and Risk Management from OTA, 1981

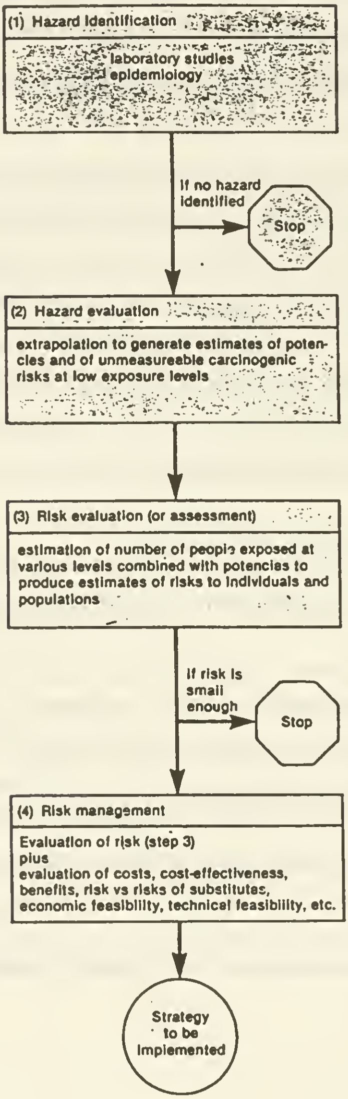

(1) Hazard Identification
laboratory studies
epidemiology
If no hazard identified
Stop
(2) Hazard evaluation
extrapolation to generate estimates of potencies and of unmeasureable carcinogenic risks at low exposure levels
(3) Risk evaluation (or assessment)
estimation of number of people exposed at various levels combined with potencies to produce estimates of risks to individuals and populations
If risk is small enough
Stop
(4) Risk management
Evaluation of risk (step 3)
plus
evaluation of costs, cost-effectiveness, benefits, risk vs risks of substitutes, economic feasibility, technical feasibility, etc.
Strategy to be implemented

Figure 2

Risk Assessment and Risk Management from NRC, 1983

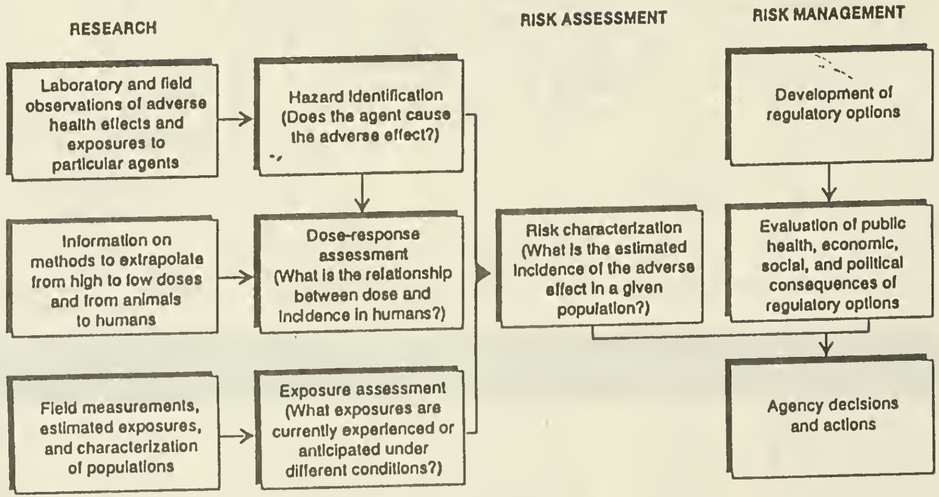
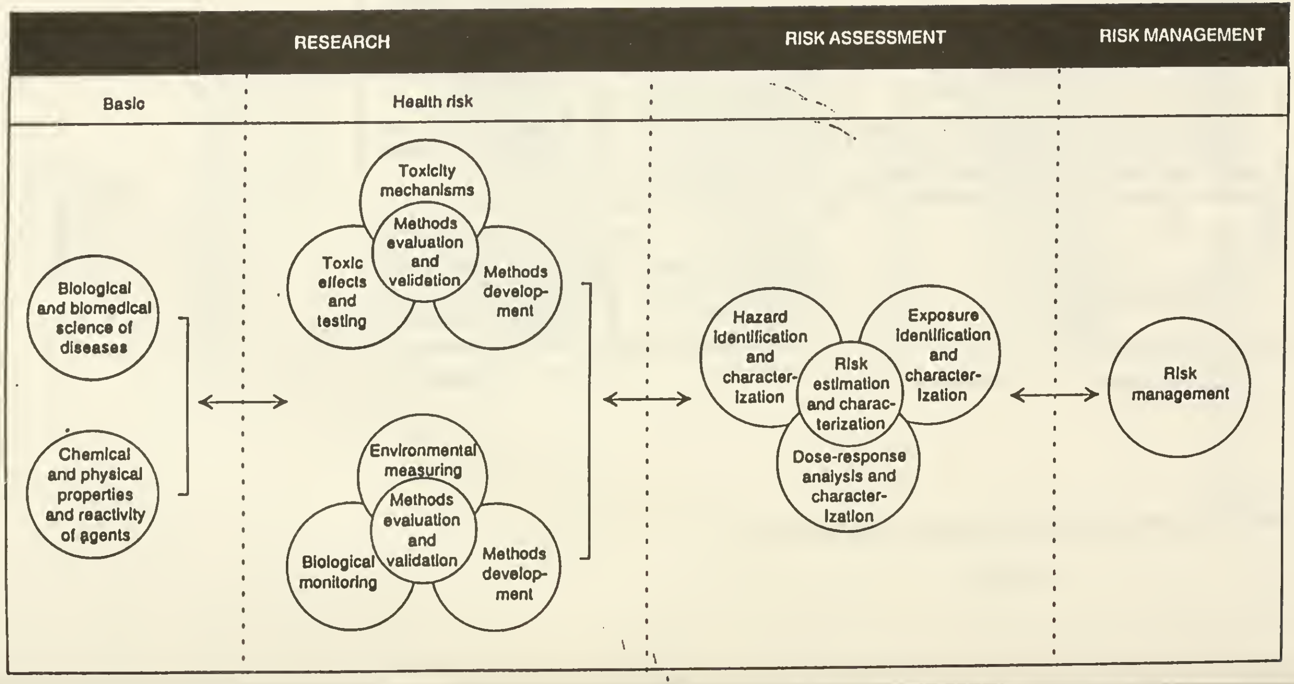

RESEARCH
RISK ASSESSMENT
RISK MANAGEMENT
Laboratory and field observations of adverse health effects and exposures to particular agents
Information on methods to extrapolate from high to low doses and from animals to humans
Field measurements, estimated exposures, and characterization of populations
Hazard Identification (Does the agent cause the adverse effect?)
Dose-response assessment (What is the relationship between dose and incidence in humans?)
Exposure assessment (What exposures are currently experienced or anticipated under different conditions?)
Risk characterization (What is the estimated incidence of the adverse effect in a given population?)
Development of regulatory options
Evaluation of public health, economic, social, and political consequences of regulatory options
Agency decisions and actions

Figure 3

Linking Research on Health Risks to Decisionmaking, OTA, 1993


RESEARCH
RISK ASSESSMENT
RISK MANAGEMENT
Basic
Health risk
Biological and biomedical science of diseases
Chemical and physical properties and reactivity of agents
Toxicity mechanisms
Toxic effects and testing
Methods evaluation and validation
Methods development
Environmental measuring
Biological monitoring
Methods evaluation and validation
Methods development
Hazard identification and characterization
Exposure identification and characterization
Risk estimation and characterization
Dose-response analysis and characterization
Risk management

MR. SWIFT. First of all, let me say to you, Mr. Grumbly, I am extremely pleased to hear the policy articulated that you did with regard to including the public and so forth and so on, a problem that I have had over 15 years in this committee with your Agency's attitude of get out of the way, boy, I am going to take care of you, rather than letting mere nonscientists and technical people have an input to the process, and I think for reasons that—frankly some of the charts that the EPA brought—the policy you articulated is a great improvement and a help.

I think maybe the threshold question here, before we get into some more technical ones, is how we can use scientists and technicians to help us in this area. You know mankind has looked at lawyers to solve all of their problems and kind of stopped doing that about the time of Shakespeare.

We have gone through a decade of looking to economists to do that, and I concluded that Shakespeare was wrong, we should kill all the economists first and then get the lawyers. I think that those of us who are laymen and nontechnically or scientifically trained, we tend to have the view, at least with science, that 2 and 2 will always make 4. It is concrete. We can ask you and you will give us the answer. That is not true. At least I have not found that to be true.

So that the question I am asking here is to what degree should policymakers rely on—let me ask it another way. Will scientists agree sufficiently on some of these issues that we can put some significant reliance on processes that come along, or will reasonable scientists find sufficient areas of disagreement that what you really will be providing us is the scientific testimony, we can select to buttress whatever policy argument we want to make in the first place, which is what we do with economists and lawyers.

If all you do is provide us with another smorgasbord from which we can select our debating topics, then I am not sure this really helps us much, it just gives us new fruit to throw at each other in debate.

Mr. Grumbly.

Mr. GRUMBLY. Well, first I think that at least my experience with scientists, having been a nonscientist and having to interact with them over many years, is if we don't engage in the kind of polarizing activity that we sometimes do, if we don't—and I will continue the lawyer beatup for a second—if we don't get people into the kind of adversarial environment where we force scientists to take sides over small differences, that my experience is that scientists tend to clump together on a lot of these things. That is far from being risk takers, that there is much more agreement about a number of these things than there is disagreement.

Now, that is not to say that there aren't disagreements around the edges, but I think we have to construct environments in which the free flow of information among scientists can produce credible estimates. I think you would find a consensus on a lot of things and a few outliers, but I think there is actually the opportunity to have the scientists come together on these issues.

Second, I think we can maximize the possibility that scientists come together on these issues by ensuring that there is sufficient data available. I was struck last week over in the other body listening to Senator Moynihan talk about the progression of data in the labor statistics area over the last 30 years, that 30 or 40 years ago there was really no good information about labor statistics, but we made the investments in terms of research and over time were able to get to a point where many of the numbers that we now see are commonly accepted. But that was only done by making the kind of investments in science that we actually need to make.

And in this area of risk assessment, for example, we have not, despite all of the hoo-hah about how we ought to be using risk assessment, over the last 15 years made the kind of R&D investments, particularly in exposure analysis. I mean how much are human beings actually exposed to these chemicals to be able to produce a lot of good estimates?

So I think the combination of targeting what limited resources we have in exploring some of the assumptions that are used in risk assessment, plus providing environments within which scientists can come together to produce credible estimates will give us the kind of data that I think we can rely on more times than not.

Now, that is not to say that either you as a Congressman or me as an administrator can willy-nilly take the information that comes from scientists without talking about all the other factors that are involved in the game.

But I do think that we can do a lot better over the next several years in developing estimates that are based on better data and, two, providing situations in which scientists can discuss these matters on a reasonable basis and not in a polarized way.

Mr. SWIFT. Yes, Dr. Goldman.

Ms. GOLDMAN. I agree. I would like to add a little bit. I think there are good examples of scientific consensus building processes that have been used in the past in this area. One is the process that the EPA went through in coming up with the 1986 risk assessment guidelines which actually involved a lot of interaction with the public and external scientists, and the second is the use of the National Academy of Sciences to come up with scientific consensus documents. One they are preparing right now is a study of the risk assessment methods that are being used at the EPA, which should be very useful to Congress in making decisions about where to go with this.

I also think that even after these consensus building activities occur, Congress will always need scientists willing to come forward to have different points of view. The nature of science is that you never achieve absolute consensus, and so you will always be faced with—even when there is a general consensus in the scientific community about the best way to go—individuals who have a different point of view, and those points of view can be very valuable. You cannot have the expectation that those will ever be erased in any kind of consensus building process.

Mr. SWIFT. Dr. Loehr.

Mr. LOEHR. I can give you perhaps an example of how it can and has worked. It depends upon the context of the question that is being put forth. If you were having a hearing such as this on a specific scientific issue, you would have, as perhaps we have around the table today, a diversity of opinion and have also an opportunity to massage that, understand it, work it to see where everybody is coming from.

When we did the reducing risk report, there were about 39 or 40 different people coming out probably from all disciplines except lawyers because we did have economists involved and they addressed the question of how, shall we say scientifically, can you look at the question of risk.

It took many meetings and opportunities for them to interact and to understand each other, the jargon is different in many disciplines, to understand the questions and problems that were being posed, but in the end, they did come to some common agreement and understanding that allowed it to move forward.

So I am positive about the approach, just as I am positive about what I see in H.R. 3111 of having a continuing way that this kind of dialogue can take place among people over a period of time with the uncertainties laid out eventually for whoever is going to be using this information, and coming together, and then having ultimate peer review of that so that there is further opportunity for discussion.

I would agree with the other speakers that there will always be a range. It has to be expected because there are different interpretations of even data, but there is the opportunity, given time and opportunity for discussion, to come together and some general agreement with the outliers, just as in a minority opinion being available to make that opinion, but it is all available for people to see.

Mr. SWIFT. Mr. Gough, I think I did you a little assault and battery on your name when I introduced you.

Mr. GOUGH. Well, there are 7 ways to pronounce G-O-U-G-H in English. I have heard all 7.

Mr. SWIFT. Let's see if a scientist can give us a straight flat answer. Which is the correct one?

Mr. GOUGH. My family pronounces Gough to rhyme with cough. I met an attorney who worked in Philadelphia, but grew up in Baltimore who pronounces it Gough, as in G-A-U-G-H. It is a burden we bear.

Mr. SWIFT. Well, you can have a name like Swift and be called Smith.

Mr. GRUMBLY. You can have a name called Grumbly.

Mr. SWIFT. I even thought of several jokes, which I figured all of which you heard before. Yes, Mr. Gough.

Mr. GOUGH. Well, I would like to return to the OTA report that was released yesterday, and one of the things we say in the OTA report is that the research that supports risk assessment is essentially targeted research. It is research that is done for a reason.

It is therefore the case that risk assessment is done to inform risk management decisions. I think that when risk managers in the executive branch or in the Congress identify areas of great uncertainty between scientists, they can, rather than buying into a median or one of the extremes, one of the things that they can do to improve the research and to move us off the dime is to direct the researchers. They can be very emphatic and say that here is an area of uncertainty and you guys should work on that, give it your best shot, and come back and tell us what you have done.

That is very hard to do in the context of a regulation that EPA is trying to promulgate, 52 some things come up over and over and over again, and those become the focus. I think, however, that managers telling scientists what they want to know would greatly improve risk assessment research and eventually the process. The OTA report offers some options about how to go about that.

I want to now go off and talk about something that I, as a scientist, probably shouldn't talk about, which is philosophy. Risk assessment uses the tools of science and it uses the behaviors of science to do a job, but it lacks one of the essential elements of science. A philosopher, maybe the only one which I can read, is a man named Karl Popper, who has written, that the essence of science is erecting hypotheses and testing them. If you think about a risk assessment, it is a hypothesis.

The hypothesis says there is a 1 in 1 million chance that a person exposed in these conditions is going to develop cancer sometime in his lifetime. There is no way to test that. The only method is through epidemiology, and that is a such a crude tool that if there were 1 additional case in every 100 people, you might see that.

Under some conditions you might see one additional case of an unusual or rare cancer in a population of 1,000 people. You will never know that a 1 in 1 million, or 1 in 100,000, or 1 in 10,000 people got cancer from the exposure, or were spared from the cancer because of the efforts of the Federal Government. We can't hold risk assessment to the criterion that its hypotheses are testable, and I think that is important because we have to decide in our minds, everybody's minds, what criteria are we going to use for risk assessment. What criteria will we hold risk assessment up to?

I sometimes despair of my friends and colleagues in the risk assessment business who talk about validating models. If we have a risk model and use it to say it is going to cause this amount of harm in human beings, we can't always validate it. Some things we can validate. Some of the respiratory diseases that are so common that they can be validated, but when you look at cancer and many other effects, we just can't.

That is a problem at least in my mind, and I think in a lot of practitioners' minds about what criteria do we use. We can't say this is my prediction, here is my test, it falsified it or verified it.

Mr. SWIFT. One last question before I turn to my colleagues. One of the things that you talked about, particularly you, Dr. Loehr, talked about, was comparisons or ranges, if you will, of risk and that seems to be a tool that might be useful to us. My understanding is EPA has always been a little reluctant to rank risks. Could I get a little discussion on that, and do I correctly characterize EPA's reaction. Would anyone like to comment on that at all? I am trying to prioritize or rank risks.

Mr. LOEHR. I am not from or with EPA. It is difficult to be able to talk for the Environmental Protection Agency, but I think it goes back to a certain extent to the points that were made by Dr. Goldman in the sense that risk assessments are made for a specific purpose, to address a particular problem or issue, and there has been very little mandate for them to be compared, and so the Agency, as I understand it, certainly the issues that have come before the

Science Advisory Board have not been able to or even intended to provide the comparative nature of that.

When we did the reducing risk report, it was a very challenging effort for the 39 people to try to do this, and as the board identifies, we have effects compared ecological to ecological, health to health, cancer to cancer, noncarcinogen and noncarcinogen. How do you control that? We were not able to come up with it in the sense that we wished. But since we were an ad hoc committee, we decided others could better handle that. That was because it was very, very difficult.

In terms of the comparative risks or relative risks, if one were able in some kind of a matrix to be able to address the issue of an ecological risk and allow the public to understand what that meant.

In terms of loss of habitat, loss of fish or whatever that might be, they would have that knowledge. Then they might have another set of risk assessments related to cancer, how many might, as Dr. Gough identified, come under that particular risk. The public would then have that knowledge and through the democratic process be able to assimilate that, so it is that relative comparative knowledge that I see coming out, not necessarily the relative comparative risk of one against the other, but the knowledge that then may allow the decisionmaker, which is largely the public through the Congress, to be able to address those kinds of issues.

Mr. SWIFT. Yes.

Mr. GRUMBLY. Mr. Chairman, first of all, I mean, I think we can obviously at some level compare risks in the sense that, if we go to a particular site, for example, in the defense nuclear system at the moment, you know I can surely say that the risk of the plutonium at Rocky Flats, given where it is at the moment, is higher than the risks of some other chemical that is there.

There is a certain kind of common sense nature to this. But where I think we have the problem, and Dr. Loehr was really good at this, is we need to have the kind of disciplined structured approach that makes sure that we are not part of the flat earth society that will—I mean our common sense doesn't go far enough in revealing the sort of things that are out there and my major hope for risk assessment at DOE is not that it will, you know, get us out of things, necessarily, but that through the kind of discipline structured approach of looking at these issues that we will reveal some things that we might not have known when we woke up in the morning.

So I think, if we look at this as our attempt to separate things into high, medium, and low, for example, not to try to rank things 1 through 50 at the place and we approach the assessment of risk from the perspective of we are trying to look for things that our common sense would not see, I think that is a much better way for those of us who were in the, you know, sort of the risk assessment users part of the game to pursue it in the actual technical side of the game, but I do think it is possible if we can get the right framework so that we are comparing risks along the same parameters to at least get ourselves into the high, medium, and low ranking.

Mr. SWIFT. Ms. Goldman.

Ms. GOLDMAN. I agree with what the others have said, and I think it is important to realize that we do this every day, whether consciously or unconsciously, in making the decisions about what we are going to do. Where it becomes thorny or knotty is how to weigh risks relative to others when it is not intuitively obvious. It is intuitively obvious, for example, that cancer is a more important disease than nausea, and you can put your bucks into fighting cancer. That is probably going to get you further with public health than preventing nausea.

You have to take into account things other than the science when you start getting into relative risk assessments, and particularly you have to take into account public expectations.

I am from California and an example I like is about the expectations of the people in San Diego about how clean the water is going to be in the kelp beds so you can scuba dive in the kelp beds and see everything. There is a strong sense from the public, even though very few people there are actually scuba divers; they want that from the environment. People do not have that expectation of the San Francisco Bay, so you might compare the two and say rationally it doesn't make more sense that we are requiring Pacific Ocean off of San Diego. However, given the expectations of the public, it is quite rational what is going on there within the public policy debate about cleanup. Therefore, these decisions when you get into the tougher issues go well beyond what we can do just within the boundaries of the Agency, and have to involve you and the public.

Mr. SWIFT. Thank you.

Mr. Grumbly.

Mr. GRUMBLY. I agreed with much of what Dr. Goldman just said, but I do think it is very important to the extent that we can try to disaggregate the facts as well as one request from them from what the risk management decision is going to be, and one of the concerns that I have institutionally, and that I think anybody who finds themselves in the responsible party side of equation, is you want to be sure that as you are going forward to clean up, to spending large sums of money, that the regulators, and in some cases these are people who are relatively junior, aren't letting their policy choices about what we think we ought to do with, for example, San Diego influence the actual assessment of the risks that is being performed.

We may very well say absolutely, we have to keep that clean, but I want that to be a decision that is driven clearly by the other considerations and where the social policy issues have not crept in so much into the actual assessment of the risk. I think that is something that frankly I think our colleagues in all the regulatory agencies of the land need to keep a little more paramount in their consideration.

Mr. SWIFT. I suspect that for laymen, for nontechnical people letting decisions slide back and forth across that line is probably something that is pretty hard to avoid than for a scientifically trained person. Mr. Farland, I think we are going to have to go vote.

Mr. FARLAND. Mr. Chairman, I think one thing we might also add to this discussion is the scientific perspective in terms of how we compare risks and address them, and look for appropriate scientific data so we can contribute to this decisionmaking that you are talking about.

It is not just a matter of addressing the highest risk chemicals, looking also at the question of which ones have the most uncertainty associated with them based on the data that we have available, and which ones actually provide opportunities for us to make some progress in terms of selecting things that we collect information on, or do research on, or actually do risk assessments on. We have to consider all three of those criteria and not just the ones that are the highest risk.

Mr. SWIFT. Thank you. What we have is a vote on the rule of NAFTA, and then we should not have any further interruptions as we have something like 8 hours of debate on that.

I think what we will do is we will recess now. I will hurry back and I will recognize whoever is here when we get back so that we can proceed on this as quickly as possible. We stand in recess.

[Brief recess.]

Mr. SWIFT. I am sure Mr. Grumbly will be back in just a moment. The subcommittee will reconvene and recognize the gentleman from Ohio.

Mr. OXLEY. Thank you, Mr. Chairman.

I would like to start with Mr. Gough. By the way, we had a distinguished chairman of the Republican party in Ohio who is M-c-G-O-U-G-H, and he got as you said, 7 or 8 pronunciations, and his pronunciation was McGough.

Mr. SWIFT. Now, you have 8.

Mr. OXLEY. I would like to ask you about the principles in our bill, H.R. 2910. Do you agree with the basic concept that unless you ask the right questions, you don't get the right answers. Would you just talk a little bit about that.

Mr. GOUGH. We can talk about it in general. When you say that unless the risk managers ask the right questions, they won't get the right answers, I agree. They won't get answers to anything unless they ask.

Mr. OXLEY. It is not so much if they know what to ask, I guess.

Mr. GOUGH. Yes, yes. But I certainly think the report we issued yesterday emphasizes that risk assessment is going to advance as risk managers become involved in the process and say that this is what we need to know in order to do the job we are entrusted to do.

And I think there is movement in, not only in the words from EPA and the other regulatory agencies, but also their actions to get away from the reliance on default assumptions and so forth, but it takes a lot of time. It is a very slow process to move away from those, and given the public's interest in its health, that time and the slowness is understandable.

Mr. OXLEY. Dr. Loehr, can you comment on how far the Agency has moved? Dr. Goldman testified that she felt that the Agency had made substantial progress and movement towards our goal. What is your observation from academia on whether or not that is the case.

Mr. LOEHR. I guess my best observation is from those particular risk assessment documents that come before the board because they are fairly broad along these lines. And over the time period that I have seen those risk assessments come forth, one certainly can say that there has been improvement in terms of the knowledge that went into them, and the focus that went on to them, and of course the bill addresses those kinds of principles to try to increase that.

But I would like to touch upon the other issue that was brought up a bit earlier by Mr. Grumbly and others, and that is we must have something continuing in the research or developmental area that continues to reduce the uncertainties that we have in the particular risk assessments that we have now so that we will have better ones into the future, but in terms of your explicit question, certainly those risk assessments that we have been seeing have been sharper, more focused, more information in them than we did let's say 10 years ago.

Mr. OXLEY. Mr. Gough, from OTA's perspective, do you agree with Dr. Loehr?

Mr. GOUGH. You have put me in a difficult position because OTA doesn't have a perspective on this.

Mr. OXLEY. As a personal perspective?

Mr. GOUGH. Yes. I agree with him. I would also like to elaborate just a little bit on what I said in my testimony, and what is in my written testimony. Currently when EPA produces a risk assessment, it produces this upper bound limit on risks, and it says the lower bound might be zero, and the actual risk probably lies somewhere in between.

But the risk manager can only get a focus, I think, on what is a better estimate risk in this range by asking more questions. One of the fears, and an understandable fear, I think, from risk assessors, is that if they are asked many more of these questions, their job becomes much more complicated.

But I am not certain of that. I think that the techniques and the manipulations, calculations are sufficiently closely related that other estimates can be produced and that some advice can be given about where the best probabilistic assessment of the risk lies in this rather broad range.

Mr. OXLEY. So you think it is fair for us to ask for a best estimate essentially.

Mr. GOUGH. I think that is fair. I think also it fits in with what the OTA report says that we should be directing research in those directions.

Mr. OXLEY. Dr. Goldman.

Ms. GOLDMAN. I want to talk a little bit about this issue. First, I think it is inaccurate to say that the Agency just gives the upper 95th percentile boundary and zero. The Agency currently also does give the 50th percentile or the measure of central tendency of risk from the model, but I think what is really important here to understand, and you kind of have to wrap your mind around this because it is not easy scientifically, is that when we are talking about modeling risk from high to low dose, we don't really understand the shape of the dose response curve.

The shape of the line that goes from the high dose to the low dose and when we are talking about these bounds, we are not just talking about a bound around a single number. We are talking about a line that rather than being a sharp thin line that we precisely understand and can give you the best number, we are talking about a blurry line that we have agreed among the scientific community to use right now as probably the best model that we could use.

It may not be the model that scientists continue to use in the future to do this. The point of the upper 95th bound is that the upper limit of that blur on where we think the dose response relationship lies. It is not that it is worst or that the middle number is best. I don't think that those kinds of value judgments really apply. We are really talking about statistical concepts here that have been applied in order to deal with the uncertainty that we have.

The other thing I think that is very important to keep in mind is that we are going not only from animals to humans, but also from animals which are highly inbred and genetically dissimilar to humans which have a lot of diversity and variability genetically and in the environments to which they are exposed.

In the kinds of exposures that we have, they are not controlled situations that we live under. Given that uncertainty, I think that is one of the reasons why, this scientific consensus developed. You have to present this not in terms of best and worst numbers, but in terms of giving some kind of a range of the uncertainty that is there because we want to make sure that we are protecting members of the population who may be more vulnerable and more exposed, and this isn't a trivial number of people, it could be a very large number of people.

Again, of 250 million in the country the upper bound 10 percent would be 25 million people. These are the reasons why these kinds of practices have come into being. We do need more research. I think we do need to continually improve this process to reduce this uncertainty.

We need to understand the mechanism better, and mechanistic understanding is what leads to the development of the models that we use. We need to be able to look more at what is going on with individual chemicals and not assume that they all act by the same mechanism.

We need to understand more about individual human variability and exposure and who really is exposed, and the more of that kind of information that we gather, the more refined our models will be, and then we truly will have better estimates of risk.

Logically over time, our methods are going to change and that points out to me that we will see better risk assessments as we go along. That is the kind of process that we are engaged in.

Mr. OXLEY. It seems to me that we are not necessarily asking you to go beyond what your capabilities are, but simply to be plausible with the scientific community and with the public.

Let me ask Mr. Gough if you agree with the model that Dr. Goldman described—not necessarily that you do, but if the scientific community is of one mind in accepting that model that she described.

Mr. GOUGH. No. Dr. Goldman mentioned the difficulties in using animals as predictors of human actions and there have been some clear examples of where additional research has shown that the animal model was incorrect. For example if there is a protein in an animal that doesn't exist in a human being and that protein is involved in the cancer, it is impossible that cancer could occur in human beings by the same mechanism. That is discounted. That is very important.

With carcinogens in this country, as you know, we assume there is some risk at any dose above zero. Not everybody agrees with that. There are some scientists who say that for some chemicals there might be a threshold which has to be exceeded before there is a risk of cancer, so there is a disagreement.

Mr. OXLEY. Let me describe, maybe what from a layman's perspective, some problems that developed 2 or 3 years ago with the alar scare.

In that case, you had what can best be described as an out-of-the-mainstream study done by apparently an environmental group that made some rather startling revelations about apples and apple juice and the effects on children specifically.

You had the situation where the report which was not, as far as I know, conducted by EPA or by FDA or recognized authorities, was released in a very sensational way to the media, to the point where it became a very big national story that ultimately cost the apple industry millions and millions of dollars.

How do we, from a public policy standpoint, deal with those kinds of irrational, off-the-wall, sensationalized kinds of studies that are extrapolated by the news media into this major issue?

How do those of us in responsible positions and in your situation ever compete with that sensational kind of publicity based on bad or at least inexact and incomplete science? Dr. Goldman?

Ms. GOLDMAN. Yes, I think I can address that. I think that the alar example is a good one. In that case, there was a cancer assay in animals that appeared to be positive, but the Agency scientists were not 100 percent certain that was correct because it had been done several years prior and the laboratory that had performed the assay had not used all of the good laboratory practices that we expect.

The registrant of that pesticide wanted to go back and repeat the study before action was taken by the government on the issue. What the environmental groups did was a risk assessment based on that study that indicated that indeed that there was a risk that was in a range that the Agency would normally regulate.

I think there are a couple of lessons. One is that there is a confusion in the public about the risks that are in a range that require regulation versus the risks that are in a range that require them to take individual actions to protect themselves and their children.

I would not consider a risk of 1 in 10,000 lifetime risk for cancer to require that parents stop feeding their children fruits and vegetables and take individual actions to protect their own children, but that certainly is in a range where government needs to be concerned and be involved.

Subsequent to that episode, there was another similar episode that happened that almost nobody heard about where the EPA identified a problem with aldicarb in bananas that were being imported into the country where the levels on some individual bananas were in a range that could cause illness in a child.

The reason why there wasn't publicity was that the Agency was able to work something out with the company that made aldicarb, and the growers of the bananas, so that the problem was resolved. I think that really is the answer. I think that we need to be able to take action, when government should move in and take action promptly and not leave it to individuals to make those kind of decisions that are not going to add much in terms of reducing risk for their individual children, but might be important for society as a whole.

Mr. GRUMBLY. I have agreed with what Dr. Goldman has said but would like to say that nothing substitutes for leadership on this. What do I mean by that? I don't think we are going to ever be able to prevent studies like that whether it was good bad or indifferent from appearing out of the blue, but I think it is the responsibility of the EPA and responsibility of people who are in positions of public trust when those kinds of studies come onto the scene is to do essentially what Bill Rucklehouse did when he was administrator dealing with a substance called ethylene bromide, which you might recall was a fumigant that there was a big scare about, as a result of a risk assessment that said there was going to be a large cancer again in this case problem, and what Rucklehouse did when the study came out, he came out very quickly and said we are going to take this study as seriously as possible. We are going to evaluate according to the best scientific methods. He put a time limit on how long it was going to take the Agency to evaluate it, and he said I will be back in front of television cameras in 21 days, or whatever it was, and I will give you our best assessment of the safety or lack thereof of this particular chemical. He did that.

He was able to keep the public's confidence with him because he was open and direct; and, when he came back and basically said, we don't think this is as big a risk as has been made of it, the scare went away. So I think that the solution for dealing with bad risk assessment is in part a scientific solution, but it also depends upon having policy people who are educated about this stuff, are willing to be able to step up to the plate, and also to be able to kind of quell the public's problems in this area. You can't step away from this.

The numbers aren't going to save us. The leadership is important.

Mr. OXLEY. Mr. Chairman, if I might ask just a couple more questions.

Mr. SWIFT. Sure.

Mr. OXLEY. I would like to have some responses from the panel on the upper bounds versus the best estimates. Is the current system of providing information on health and environmental risks slanted toward only answering the question of the upper bound risk level as opposed to the most plausible level of risk?

If so, who made that decision, the Congress through our statutes, EPA risk managers or EPA scientists? Can you give examples of which programs only give upper bound or conservative levels, and those which also provide a best estimate.

Let's start with Dr. Goldman.

Ms. GOLDMAN. I don't think that overall the system is slanted. I do think that there are differences in the different statutes we use in terms of whether we are instructed to look at upper bounds or not. For example, some of the legislation actually instructs the Agency to look at the maximum exposure level and——

Mr. OXLEY. You are talking about the Clean Air bill?

Ms. GOLDMAN. That is correct.

Mr. OXLEY. That would be, for example, high risk folks, those with emphysema, that kind of thing, is that what you are referring to?

Ms. GOLDMAN. The folks at the highest risk who have the greatest exposures, but I don't think that the current practice for doing risk assessment is what I would call slanted. I would say that they do attempt to define who are the populations who are at risk and to attempt to calculate the risks for those populations in general. There is a lot of variability in our statutes about how we do that. For example, in the pesticide area, we tend to look at the average American diet, and we have been criticized by the National Academy of Sciences for not looking at more worse case diets, diets of infants and young children, and especially those infants and young children who eat a lot of fruits and vegetables. Now we are going to actually look at that.

As you know, whether you call that a slant or a bias versus trying to achieve a certain goal in terms of public health and protecting those who actually have the exposure that we are trying to regulate, I would prefer to think of those kinds of procedures as falling into the latter category. That is something that government is here to do.

Mr. OXLEY. It seems to me, as an observer, that the incentive for this would be to avoid being second-guessed somewhere down the line. The easiest way to do it would be to make the worst scenario kind of estimate. I think that that is human nature. Would you agree with that?

Ms. GOLDMAN. I would not agree with that. I have been in situations where members of the public have asked government to come up with worst scenarios. The risk assessments that I have seen at the Agency at this current time, I do not believe constitute worst case scenarios.

I do think, though, there is a lot of concern that assumptions may build up on each other and that you may end up with impossible assumptions. I think that the answer there is that we must put the information about risk out in a way that makes it absolutely transparent to people what those assumptions were and how they may or may not build on each other, and who they may apply to out there in the world. That way people can make their own judgment about what we have done.

Mr. OXLEY. That is a good point. I know from the budget fiscal 1992, for example, they have a list of causes of death that gives the mortality risk per million persons and the average risk per exposed individual. Something probably the average person is not all that aware of.

Are you saying we could use something like that to give the public a better understanding of what those risks are?

Ms. GOLDMAN. I think that is useful. I think it is also useful if we can take it to the point of figuring out where those exposed individuals are and actually targeting our efforts more to protect them.

Mr. OXLEY. Thank you.

Mr. Grumbly.

Mr. GRUMBLY. Well, part of this conversation is a little ethereal to me and for the following reason.

Mr. OXLEY. I don't want to get ethereal here. I can't even spell it.

Mr. GRUMBLY. Not you. We have been talking about improving risk assessment and whether we are using conservative assumptions. I think on the national level EPA has really done—is starting to do a much better job and getting much more sophisticated and doing a lot of things that Dr. Goldman has said.

I have to, and have in the past, deal with risk assessment on a retail basis, on a site-by-site basis where EPA contractors or other people's contractors sort of come in, turn the crank, use a lot of assumptions that Dr. Goldman indicated tends to cascade conservative assumption on conservative assumption, and then hit a particular hazardous waste site with a risk, an estimated risk that simply doesn't bear any relationship to what anybody who is knowledgeable actually thinks is a real risk at the site.

So I think one of the big challenges for us, particularly in the hazardous waste business, and I confess I am parochial about this where we are spending billions and billions of dollars, is to find ways to translate the sort of the great thing that they are doing here at headquarters out to the people who are actually cranking the numbers on a daily basis and getting more realistic there.

Mr. OXLEY. Mr. Gough.

Mr. GOUGH. A couple of things about where Dr. Goldman and I are in disagreement about upper bound estimates. I completely accept what she says about this thick line for the risk assessment line from an animal carcinogenic study. However, that thick line does not encompass completely different models that may predict much lower risks. The implied assumptions that she mentioned, aren't very transparent, oftentimes, as you just said. With more explanation of those assumptions, I think then the risk managers will have a better idea of what the risks are projected to be.

Mr. OXLEY. Dr. Loehr.

Mr. LOEHR. Just to kind of pull a few things together here, the whole concept of risk communication is so very important because it helps to demystify what the results are that are coming out so the public can understand. It goes back to your question of the apples and the alar.

I guess maybe it is my hope or my belief that if the public had a better understanding of what relative risk was, they would understand when it comes out. We would never however be able to stop the news releases and so forth, but there may be a better demystification of this over time along the way, but there is an example I might talk about here about the cascading of assumptions and the need as Tom Grumbly has put here for a reality check.

It also comes back to the point that was asked before about improvement in risk assessments at the EPA. About 8 years ago the Science Advisory Board was asked to look at some of the assumptions and the decisions that—the scientific basis behind some possible decisions of sludge disposal. They looked at sludge disposal in the ocean and on the land, and in landfills, and for incineration, and so forth. I was involved with one that dealt with the ocean.

There was the cascading of assumptions and the looking for the population at risk and how many people ate fish out of the ocean where the material was going to be disposed of, et cetera, and how long this was going to go on, for 70 years and they also smoked and they did a few other things, and finally the question was asked, where is that person that was at risk, because it came down literally on cascading to a person, and that I think was the first time that the peer review reality check moved in and they said, whoa, and they went back and redid it.

I think as a result what has come out now which came out finally in February of 1993 are some better decisions along those lines, but it was because there was an opportunity for the risk assessment information to be transparent, in this case, happened to be to the board, that there was a review, and that sharp questions got asked, so it could be put into context.

That was the communication, not to the public, but I think one can go beyond that to the demystification of some of these issues to the public.

Mr. OXLEY. Thank you.

Thank you, Mr. Chairman.

Mr. SWIFT. I just wonder if Ms. Goldman had any final comments she wanted to make in that round robin. OK.

Happy to recognize the gentleman from California.

Mr. MOORHEAD. Thank you, Mr. Chairman.

I have just been informed that the bill I am handling in Judiciary is up in about 2 or 3 minutes. I am going to be very, very short.

Mr. Loehr, does EPA typically state the magnitude of how conservative its estimates are?

Mr. LOEHR. Not in that particular context that I am aware of, Mr. Congressman, in the sense of how conservative they are. They do frequently try to identify the range of uncertainty associated with this so that again, as has been discussed, the population at risk can be better identified.

Mr. MOORHEAD. I had a few more questions, but I am going to yield back my time to Mr. Oxley and perhaps he can ask them. I have to leave.

Mr. SWIFT. That would be fine.

Mr. OXLEY. Mr. Chairman, in the interest of time, I would ask that we submit some questions in writing to the panel.

Mr. SWIFT. Would the panel be willing to respond in writing?

Mr. GRUMBLY. Sure.

Mr. SWIFT. Without objection, so ordered. The gentlelady from Arkansas.

Ms. LAMBERT. Thank you, Mr. Chairman, and I will be brief.

Dr. Goldman, from my understanding, you stated in your testimony that EPA has a piecemeal approach to the risk assessment through the mandates of various environmental statutes, and you have got obviously different risk assessments, standards, under FIFRA and Safe Drinking Water Act and Clean Air Act and a multitude of things.

Is it difficult for EPA to conduct various types of risk assessment analysis under each separate act, and would it be better to have a policy set on one standard across the application of all environmental statutes to establish risk assessment criteria and have a uniform approach when you are analyzing the risk to human environmental health?

Ms. GOLDMAN. It is a concern to the Agency that there is this lack of uniformity. However, it does not pose a technical difficulty to the Agency.

I think that the individual programs who carry out the mandates under these acts have adapted to the mandates and are capable of carrying out the kinds of assessments that are required.

Ms. LAMBERT. In a timely fashion?

Ms. GOLDMAN. As timely a fashion as we carry out all of our mandates. I think that it would be desirable if there were somewhat more uniformity just in that the products of these risk assessments would then be more comparable across the different programs.

Ms. LAMBERT. So you feel like it is feasible to have some type of a national health type formula to evaluate risk?

Ms. GOLDMAN. It is feasible. I would caution against legislating precise methodology because I think, as I said before, that risk assessment is an evolving process. Actually what we want to see is a reduction in the uncertainties of the process through research that elucidates more information about mechanisms, exposure and so forth. However, we would like to see, you know, more consistency, and I think that the Executive Order issued by the President is an attempt to get more consistency, not only in the way that things are done in the Agency, but actually across all the agencies in the Federal Government.

Ms. LAMBERT. Yes, sir.

Mr. GRUMBLY. Ms. Lambert, I think you and your colleagues on this panel are going to have a major opportunity to wrestle with this consistency issue in risk assessment when you grapple with Superfund during the next year because I think that is an area where, while I agree totally with Dr. Goldman that you shouldn't get yourself into legislating exactly how every assumption is, that examining closely the basis for which the Agency makes its assessments on risk has major, major financial consequences for the Nation in this area, so it is an area that is worth getting into, I think.

Ms. LAMBERT. Well, I think it boils down to two questions, and one obviously is there is technology available to do what we want to do, and two, is the EPA capable, and when I mean capable, I mean, do they have the manpower abilities? In the bills that we have discussed or that are included in today's discussion, they would require more from EPA when analyzing the risk assessment. Does EPA or DOE or those that are currently asked to be involved in this process, have the resources, personnel, funds, and technology to comply with those kind of provisions? I mean how costly will this next step be?

Ms. GOLDMAN. I think that some of the provisions could be costly. Much of what is in the bills, the cost is relatively modest. Even putting together new advisory committees has a cost in terms of coordinating those committees, the travel, the staffing. They don't work well unless there is a considerable amount of input of time by EPA staff because really, in those advisory committees, we must rely on the generosity of people like Dr. Loehr who are willing to have little compensation to actually dedicate time to the Agency that they could otherwise be spending on their own research and enhancing their own academic careers.

There are also costs, I think, if you add more risk assessment requirements onto decisions that are small decisions. I think that is something that we have to look at very carefully. We want to see more use of the tool, and we want to make more rational decisions, but we don't want to load on analyses onto decisions that are relatively minor that cost the Agency or society very much money. In some cases, there are even decisions that have already been made by the Congress where doing elaborate analysis within the Agency may not add very much to the process in terms of what ultimately we are going to do, say if we have statutory deadlines that have been put into place.

So I think those would be the cautions that I need.

Ms. LAMBERT. Again, in your last statement there that I think a more broader or overall description would be helpful in eliminating some of the redundancy or the costliness of redundancy.

Do any of the other panelists have comments on this?

Mr. GRUMBLY. I would just—one of your former colleagues used to say $1 billion here, $1 billion there, pretty soon it is real money.

We are going to spend $14 billion next year cleaning up hazardous waste in this country. And I think that often there are large questions in a lot of people's minds whether we are getting the benefits for that. The only way to really assess the benefits better is to make some investments in assessing the risks so you know, for example, we at DOE have transferred, with your approval, money and dollars to EPA so they can actually do a better job assessing the risks at our places, so I think we really need to grapple with this and make sure they have the resources that are necessary, because the costs to society of not is really tremendous.

Ms. LAMBERT. Well, my Dad never said $1 billion here and $1 billion there, but he did say it is the result that counts.

So thank you, Mr. Chairman.

Mr. SWIFT. I am going to send a question to the agencies on cost. Lots of good things cost a lot of money. I think if we can get a breakdown, not just overall, but on the various kinds of things each of these bills ask, it could be very helpful for us coming up with a cost benefit ratio, and the other thing I am going to ask and probably of the nonagency witnesses as well and it has to do with that.

Let's assume we can come up with a good risk assessment and we all understand what we are doing and so forth and so on, can you then add a cost benefit ratio to that or then do you really set up a whole new other series of problems of running back and forth across that line of public policy considerations and scientific considerations, but I will leave that for people to comment in writing. I can see where we are going.

Once we get a good risk assessment, then we are going to try to put a cost benefit ratio on top of it, and I don't know whether that is logical or not or under what circumstances that would be a safe thing to do.

This panel has been extremely valuable to us. We thank you very much for the time you have taken to share your knowledge with the committee.

I would say that Mr. Oxley and I usually try to kind of set up a timeframe on this, and we were sure wrong this time. We are 20 minutes behind where the third panel was supposed to begin. So, well, if everybody will keep that in mind and we will try to, too.

On the other hand, I will—the second panel certainly should approach the bench. Mr. John Moore and Dr. John Graham. As they are coming, this is just the kind of issue that you can't necessarily deal with a yes or no answer to the questions. You can understand why we are slipping a little bit.

We thank you both for being with us. As you know, your prepared statements will be made a part of the record. I am happy to recognize at this point Mr. John Moore.

STATEMENTS OF JOHN A. MOORE, PRESIDENT, INSTITUTE FOR EVALUATING HEALTH RISKS; AND JOHN D. GRAHAM, DIRECTOR, CENTER FOR RISK ANALYSIS, HARVARD SCHOOL OF PUBLIC HEALTH

Mr. MOORE. Thank you for the opportunity to appear before the committee and knowing that time is of the essence, my statement will be put into the record.

Let me just try to highlight a couple points that might emphasize some things that you heard previously from the other panel, and also maybe identify a point or two that I think is worth introducing for your consideration.

I think you heard from the previous panel that the inherent technical aspects of this process called risk assessment is a sound concept. There are problems with it. There are warts involved and things like that. But those can be handled. Those can be improved upon.

But I must say that I think we need to probably try to improve on the process because I know of nothing in the way of an alternative that could totally deliver some of the things that we would like to have in our decisionmaking plan that could probably come through a good sound risk assessment.

At the same time, I think risk assessment, as it is currently being used in the arenas in which it is being put, probably is not even coming close to delivering full measure of what you would like to get and probably could get.

I would like to highlight just a couple of those. One has been talked about and that is that as technically sound as a risk assessment might be, we have got to be much more transparent in communicating what that judgment is to an interested public. And we have got to very clearly state what was done, why it was done, and the certainty of the judgment that ultimately comes out at the end after the risk assessment. We typically don't do as good a job in that area as needs to be done, and therefore the public continues to view it as a black box and much could be done, I think, in that regard.

The other thing I think we can do is we can—while the basic paradigm of risk assessment works, we can certainly enhance the quality of the products that are coming out of it within the communication aspect I just mentioned.

We have got to put better information into the process. If you don't—it is a garbage in, garbage out type of phenomenon. If you don't have very good animal data or very good human data or both, you obviously are going to have to stretch and become uncomfortable maybe in some of your judgments because that is the best you can work with.

So in some instances, there is a great deal of uncertainty with the judgment. The judgment is the best you can get from a group of scientists, but it is still highly uncertain. We need to create a mechanism in this country whereby you can reward the production of data that will further enhance the accuracy and the certainty of whatever is coming out at the other end.

We currently don't have that, and in fact I think there are probably a number of disincentives for the generation of data that would allow one to end up with a better product. I think that needs to be strongly looked at.

The other thing that is clear and we need to make no bones about it. When it is all said and done, this thing called risk assessment is a judgment. It is not 2 and 2 is 4. There is not an abacus that can only have one and that comes out the other end. It is a judgment.

I think the degree of quality control over the review of that judgment should be commensurate to the application to which a risk assessment is going to be put. I don't think you have to come up with a gold plated peer review mechanism forever just that is dealing with the issue of risk assessment.

But I do think that quality of review and truth need to make sure that there is agreement that the facts were used the way the majority of scientists would use it should be proportionate to the magnitude of the impact that a judgment is likely to have.

That currently doesn't happen as well as I think it should and my testimony cites an example, that of a system that EPA commendably has developed called IRIS which in essence is taking all the risk assessment information that the Agency has done, and put in it a form that is available worldwide on line, if you can dial in with your computer.

That is a very laudable goal. It allows people not to have to reinvent the wheel every time they come up with an issue dealing with chemical *X* or chemical *Y*. At the same time, it is becoming the backbone for decisions made by EPA on local Superfund sites as used by State governments or local governments or even internationally.

You probably should put a premium on making sure that what is in there is as good as it could be. There are some problems with that system that have been identified and acknowledged that indeed the quality is uneven. Here is an example I think of the need for far more rigor to be put to making sure that what is in there is of the quality that we can reasonably expect because of the impact of the judgments that are going to be either too high or too low, you have got some uneven quality in there.

Maybe what is being described there since the system I think has gone far beyond what EPA ever envisioned is an example of something that Tom Grumbly said in his testimony and that is once in a while the government has to let go, can't control all things. In this instance where there is such a broad array of interests and the potential broad input to be put into it, perhaps creating a mechanism where there is more than just an EPA input, but other governmental agency input as well, or even outside of the government involving a State or private sector, suggests that maybe one should look at that as a means of enhancing the quality of what is in the product. Certainly having a system like that is one that is highly desired.

The other point that I would like to comment about is making sure that risk assessment stays current with advancing scientific knowledge. You can't create a risk assessment guideline 5 years ago and expect that it should be locked in forevermore.

We are just learning so much about how chemicals do various things or how they don't do things. We have got to find a mechanism to constantly review this flood of basic research knowledge that is coming out to improve the process, and I don't think that has got anywheres near the degree of scrutiny that it certainly deserves.

The other thing I would like to do very briefly is to provide comment on the two bills that have been referred to this committee.

I think H.R. 2910 comes close to achieving the positive results that we all maybe would like to see, without creating undue administrative burdens. I think it remains focused on the main issue which is systematic development and communication of the scientific basis for identifying and characterizing health risks.

I don't think it is proscriptive in detailing how it is to be done. It certainly will have to be addressed. I don't believe it is telling how to address them in this case, telling EPA how to address it. There are a range of topics that need to be looked at.

I have some major problems with H.R. 3111. It certainly is very broad in scope compared to the other piece of legislation, and I find it quite proscriptive in some instances, and typically with many of its definitions and its actions.

For example, I find that section 5 creates committees that are supposed to do whatever they are supposed to do, presumably because we feel the Agency isn't able to do it by itself. It then has its report referred to another committee which then reviews on that committee.

I think that is creating such a ponderous process that it is highly unlikely that it is ever going to go to anything of real value in real time. Section 6 speaks to the creation of risk assessment guidelines, which I think is a positive aspect to the bill, but then offers the fact under section 8A that primarily only Agency personnel can participate in the creation of these guidelines.

I think that is the very antithesis of what everyone wants in the thing called risk assessment. I think you need broad participation across the scientific community in America to work on these guidelines in order to make sure they stay ever-green and current with knowledge. Restricting it to a small group of people within one governmental organization, I think is not the way to maximize the potential for that to happen.

The other perverse outcome I think of doing something like that is that it never gets the broad scrutiny and therefore the buy in by the scientific community that indeed risk assessment is a tool that basically builds upon a scientific knowledge.

Well, I have problems with the bill as currently written. There are some positive things about that bill. I certainly think speaking about the guidelines is a very positive aspect. I also think the research section probably has value.

And speaking to the need for coordination across the Federal Government, as I point out in my testimony, is a critical need. I am not surely vesting that cross government coordination into an Agency at EPA's level is necessarily the right way to go. What happened to the Executive Office of the President. You know, leave somebody else to decide whether that is an OSTP or something else. It seems that is the area of coordination that might best yield the results.

The other thing I would mention that I found favorably in the research part of it is speaking to the fact that when it identified tasks it was going to accomplish, it then also specified at the time of award of the researcher, grant or contract or whatever the case may be.

It identified the need that it should be for a minimum of 3 years and the money would be put up front. The reason I speak so strongly of that point is I spent 15 years at NIH, which obviously is well-known worldwide for the quality of the research that it funds and everything else.

One thing that I think makes NIH such a quality mechanism for getting research done in universities is the stability of the research found funding that goes along with these grants that are awarded. Unfortunately, for a variety reasons, EPA has never had that luxury.

EPA has come up with some very sound research initiatives dealing in the area of risk assessment and then very quickly at the end of the first year, the end of the second and the third year, to really bring it home and make it come to positive fruition. The money is eroded because of competing of other interests often identified by language in the appropriations bill.

So doing something that would identify a means where EPA's research in this area of risk assessment could have some degree of stability over a midyear period of time I think would go a long way to getting research done that could then in turn be reinvested back into the process to allow us to get better answers.

I will conclude there, Mr. Chairman.

Mr. SWIFT. Mr. Moore, thank you very much.

[The prepared statement of Mr. Moore follows:]

STATEMENT OF JOHN A. MOORE, PRESIDENT, INSTITUTE FOR EVALUATING HEALTH RISKS

Good morning, Mr. Chairman and members of the committee. I am Dr. John A. Moore, President, Institute for Evaluating Health Risks (IEHR) a non-profit entity that seeks to improve risk assessment processes through a more robust application of scientific knowledge. IEHR has received funds from State government, the private sector and Federal agencies in the pursuit of these activities.

I am pleased to respond to the invitation to appear before the subcommittee and discuss the risk assessment process. My career spans 14 years as a research toxicologist and program manager at the National Institute of Environmental Health

Sciences, NIH, about 5 years as Deputy Director of the National Toxicology Program and 6 years at the U. S. Environmental Protection Agency (EPA) as Assistant Administrator, Office of Pesticides and Toxic Substances, and Acting Deputy Administrator. For several years I chaired EPA's Risk Assessment Council. I was also a member of the group that developed the OSTP Cancer Principles, published in 1985, which set forth the science base from which various government assessment guidelines have evolved. Integrating my knowledge as a board certified toxicologist with career experiences in science policy and regulation permits me to share a perspective that I hope is of value to the subcommittee.

My testimony will focus on three topic areas:

—Risk assessment as a tool;

—Enhancing the quality of risk assessments;

—Selected comments on H.R. 2910 and H.R. 3111.

The risk assessment process can provide products that range from terse simple analyses to elaborate multifaceted evaluations. Every risk assessment must have a critical initial component—it must determine the potential of a chemical to cause a toxic effect, i.e., birth defects, nervous disorders, cancer, etc. If the initial component indicates there is potential to cause a toxic effect there typically are two additional segments to an assessment: an estimate of the potency of the chemical to cause the toxic effect; and, based on patterns of chemical use, a characterization of the nature and magnitude of populations that may be exposed. Many feel that communication should be added as a fourth component to these three technical elements.

When communicating a risk assessment one should candidly describe the information and the logic that formed the basis of the decision; state how certain the people who developed the assessment are about the data or, when data were not used, what assumptions were substituted; and communicate using words and phrases that can be understood by most citizens. Communicating in this style would permit risk assessment to become a transparent process and be of utility to the broader public that often has a keen interest in chemical health issues.

The basic risk assessment paradigm in use today is conceptually sound and logical.[1] It is a methodological approach that has evolved during the past half century and has endured, in this and other developed countries, because it works.[2] While the process "works" it can and should be improved. Permit me to highlight two areas where priority attention could dramatically improve assessments and enhance the confidence of the public and decisionmakers in the utility of the activity.

Consistently include non-cancer endpoints such as fertility, effects on development when exposure occurs during pregnancy and infancy; adverse effects on the nervous and respiratory system. Failure to properly consider the broader spectrum of adverse effects flaws judgments on setting regulatory agenda priorities. While there is no question that cancer should remain a priority focus in any regulatory agenda it makes no sense to allow this disease to dominate regulatory activity at the expense of other adverse effects which may be of equal or greater public health importance.[3]

There is skepticism within large segments of the scientific community of the accuracy of quantitative estimates of many U.S. cancer risks. This skepticism is the greatest impediment to developing trust that risk assessment is a scientifically sound procedure that is properly protective of public health.

Further, methods used in the United States to quantify cancer risk frequently diverge from those practiced in Western Europe and results in 100 to 1000 fold differences in estimates. The scientific bases for the current practices need to be reassessed so that science policy may be revised as appropriate. Failure to reconcile the divergent practices for quantization of risk has great potential to become a non-tariff trade barrier.

In conducting a risk assessment it is people who interpret scientific and technical information. Since people aren't perfect a review process is a needed to insure that risk judgments reflect a correct application of current knowledge. Common sense suggests that the level of review should be proportional to its intended use; in most cases an internal review process would be sufficient. However, there are activities whose utility and impact are so broad that a risk formal review mechanism should be instituted. The Integrated Risk Information System (IRIS), developed and maintained by the EPA, is an example of such a program.

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[1] Risk Assessment in the Federal Government: Managing the Process. National Academy Press, 1983.

[2] It is a critical element in the preclinical phase as well as final approval phase of new drug development, it is the backbone for determining the safety of food additives, profiling the spectrum of pesticide toxicity, and indicating the toxicity potential of other chemicals.

[3] One is struck by the fact that the current debate over EPA's assessment of the risks of environmental tobacco smoke focuses on the accuracy of the number of estimated cancer cases and is oblivious to the judgment that environmental exposure poses a cancer risk; a point that was accepted by the science peer review. However, the major public health concern, which seems to be lost in the debate, is the size of the population of infants and children that may be at risk of respiratory disease. This illustrates the tendency for cancer risk to dominate and skew the health risk agenda.

IRIS was created in the mid 1980's to make available risk assessments prepared by one EPA office available to all Agency programs. State and local governments, the private sector and even some international activities soon sought to gain access to these assessments. They perceived these materials to be a source of accurate and current information that often exceeded their own capability to develop. To respond to these requests the IRIS system was made electronically available to everyone. This system has become the defacto source of information for all manner of activities ranging from Superfund cleanup levels, to permit writing, and creating hazard lists such as those required by California's Proposition 65. In concept this is an effective use of resources. The need for a common, reliable system like IRIS is apparent to most everyone. What is also clear is that a system with such broad use must be reliable. Unfortunately, serious concerns about the IRIS data base have been raised because some listings are believed to be of poor quality. There is no effective way to comment on proposed listings or to request revisions based on new data. To instill trust in the accuracy of IRIS listings incorporating expert scientific peer review from outside the Agency would effectively address the issue. It is frustrating to note that while the problem has been acknowledged, months extend to years while the issue is studied; no meaningful change has yet to be realized.

IRIS has evolved into something far more vast than what was envisioned at the time of its creation. It is not simply an accessible file for internal use. What the process has become demands that a premium be placed on timeliness, and quality. The latter is best established through the use of expert peer review. The resource demands to achieve these goals may exceed that available from a single agency. Perhaps a neutral organization should be given responsibility for the activity; this might broaden the base of funding to include several governmental agencies plus private sources. Some have suggested that broad legislative direction may be desirable.

Risk assessment is but one component of many public policies and regulatory actions. Managers, legislators and others want decisions to be based on sound risk estimates. All too often that is not what is being provided. Frequently, there are some data indicating that a chemical may cause an adverse effect but confirming studies or data for other components of the risk assessment process are lacking. In such instances a series of default assumptions are used, i.e., generalizations are made—the "I don't know" becomes an assumed fact or numerical values assigned where there is no data. It is not uncommon to make a series of such assumptions each of which erodes either the certainty of the judgment or the accuracy of the quantitative estimate. Carried too far risk assessment has moved from informed judgment to speculation. The problem lies not with the concept of risk assessment but in our unwillingness to get what is needed to do the job right.

Certainty of judgments as to chemical risk directly depend on the availability of data—let us create incentives for its development. There are ways to stimulate the regulated community to bring forward accurate data and scientifically sound analyses. For example:

(1) Institute a policy which establishes the presumption that data shall be utilized to a reasonable extent and that default assumptions are used only as necessary. This provides reasonable assurance that data will be used.[4]

(2) Eliminate incentives to unreasonably prolong debate over risk assessments by specifying a time definite after which public health protective default assumptions will be utilized.

(3) Establish incentives whereby previous risk assessments can be revised when appropriate advances in scientific knowledge or techniques have occurred.[5]

Our scientific knowledge of how chemicals interact in the development of disease is continually expanding. Risk assessment processes should keep pace with this knowledge. The development and use of risk assessment guidelines has proven to be of value in this regard. They have generic application, the scope and scale of what should be evaluated is delineated, how data is to be integrated is also defined.

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[4] Data must meet a minimum standard as to quality. Further, the option not to use certain information would remain provided there is a clear articulation as to the rationale for such action.

[5] Some specified standard of improvement must be realized to prevent the use of resources to make trivial adjustments.

The EPA in the mid 1980's developed several guidelines including those for developmental toxicity, cancer and exposure. These were milestones in the evolution of risk assessment in this country yet their effectiveness and utility have been limited. These limitations are due to: (1) failure to consistently revise guidelines in a timely manner to reflect advances in scientific knowledge; (2) failure to develop guidelines for such key areas as general (systemic) toxicity, neurotoxicity or immune effects; and (3) the guidelines are regularly applied by only a single Federal agency.

The time is overdue for the Federal Government to take the lead in fostering a uniform approach to risk assessment. This initiative should be participatory in nature and draw from a broad base of people so that it may reflect the best application of scientific knowledge. There is a successful precedent being established that uses such a mechanism.[6]

EPA deserves recognition as the only Federal organization that has had a sustained effort to refine and broaden the use of risk assessment. The risk assessment need, however, transcends a single Agency which calls for an active focus at the level of the Office of the President. Active leadership and innovative thinking are required—another committee composed of Federal officials will fall short of the mark. Much that needs to be done can be effectively accomplished outside of government, with, government participation. Many of the items that must be improved are very amenable to being addressed through collaborative efforts. Government, of course, should retain the right to review and incorporate work product based on merit and program needs.

Risk assessment has demonstrated a proven value in a variety of important areas yet has delivered only a fraction of its potential. This testimony outlined some areas for improvement including use of better data and implementing effective peer review processes. This committee, and this congress, need to think through whether needed improvements can best be realized through legislative remedy or more aggressive use of oversight authorities. If legislation is preferred it must create the incentive for positive results and not unwittingly establish a legal device to harass and delay.

There is a need to improve a risk assessment process that is used throughout the Federal government, by State and local agencies and internationally as well. Yet the legislation that is before you has an exclusive focus on the activities of the EPA. This is short sighted.

In my opinion, this bill comes the close to achieving positive results without creating undue administrative burdens. It remains focused on the main issue—systematic development and communication of the scientific basis for identifying and characterizing health risks. It is not prescriptive in detailing how things are to be done. Rather, it defines the range of topics to be addressed in Agency guidance. There is much to commend it.

This bill is very broad in scope and quite prescriptive in many of its definitions and actions. While I have not exhaustively studied the bill I hold serious reservations about the bill as currently written. Permit me to highlight some of these concerns:

Section 5 creates committees, presumably to do for the Agency what the drafters of the bill feel EPA can't do for itself. The work product from these committees shall, in turn, be reviewed by other existing EPA advisory committees. My experience indicates that such a process is a sure prescription for delay and obfuscation and unlikely to render a valued service.

Section 6 directs the creation of risk assessment guidelines which section 8(a) appears to direct must be done only by Agency personnel. Section 8(a) is the antithesis of what I believe is needed in risk assessment—an opportunity for substantive participation by a broad array of scientists drawn from a spectrum of organizations in this country. Oddly enough, section 8(b) seems to give back what section 8(a) restricted, the language is quite confusing.

It would seem to me that a committee on relative risk, created in section 5, should somehow interact with guideline development on the assumption they should have a use. The bill is silent on this issue.

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[6] The Institute for Evaluating Health Risks is completing a project dealing with human reproductive and developmental toxicity. A broad base of participation was drawn from universities, State health and environmental departments, commercial companies, and Federal research and regulatory agencies to capitalize on diverse experience. The project has developed *An Evaluative Process for Evaluating the Potential of Agents to Cause Human Reproductive or Developmental Toxicity* that was used to conduct evaluations of lithium, ethylene glycol, boric acid and several phthalates. The final report and chemical evaluations should be available for distribution in early 1994. Funding is provided by the Federal Government and private corporations.

Mr. Chairman, this concludes my prepared remarks. I would be happy to answer any questions that subcommittee members may wish to ask.

Mr. SWIFT. Dr. Graham.

STATEMENT OF JOHN D. GRAHAM

Mr. GRAHAM. Thank you for allowing me to be here today.

I have been vigorously crossing out paragraphs as Jack goes on. That is the good news for you. He has stolen my thunder. But unfortunately, the previous panel had a few things to say that I added a few things in, so I want to respond to those, if I may.

I think we have heard a lot of very reasoned case, both from the members today and from the witnesses about how it would be desirable to have central estimates of risk as well as worst case and lower bound estimates of risk. I think the critical question that we need to get straight is what is actually happening at EPA in the way they do these risk assessments currently?

It is changing to some extent and it is a moving target and you need to be aware of what it is you are trying to fix. We have done at the Harvard Center for Risk Analysis a systematic study of the way EPA does risk assessment. And here is the news: The various EPA program and regional offices do not report risk estimates in a consistent fashion.

Usually only one number is reported. Some of these numbers are worst-case figures. Some are conservative yet plausible numbers. Some are central estimates. And some are simply impossible to interpret how conservative the number is.

So as Dr. Goldman told you, risk assessors don't always do worst-case estimates. The problem is we are doing different things in different places. Few programs report the desired lower-bound estimate, central estimate, and upper-bound estimate that would be helpful. Now you will hear some discussion that "Oh, it is the laws that Congress passed that have created all this confusion."

At the center, we have investigated every major environmental law that EPA now operates. We cannot find any significant legal restrictions with the exception of the Delaney Clause on the actual way an EPA risk assessor will calculate risks. Our theory of practices have emerged in different parts of the agencies and different fiefdoms based upon influences, people, history, institutional history, and that the laws per se, while they regulate risk management, do not regulate risk assessment in any particularly strong way.

Now I want to emphasize further that there is a sense from the previous panel that it is Federal decisionmakers like EPA who are the critical people and users of risk assessment. I think it is becoming increasingly clear that is not the case.

There are many decisionmakers outside of EPA, States and localities, environmental advocacy groups, industry groups and international bodies, that do not appreciate the single risk number that EPA is generally reporting. Yet they use this number oftentimes in making their decisions about risk assessment and risk management.

Now, in this what I would characterize as a very confused setting and a moving target. It is very difficult for Congress, for EPA's leadership, let alone the users outside the Federal Government to rank environmental hazards with a valid, consistent yardstick. While EPA is making efforts to correct this problem, I would characterize the progress as slow and there are clear institutional reasons why particular program offices and particular regions won't necessarily benefit from a more consistent way of reporting risks, and they are going to put up institutional barriers to making this process move forward.

Now, sound risk assessment can clearly play a useful role in helping us get the most bank for our environmental buck, as several people have mentioned. But to do so I think Congress has to insist that risk assessment be performed in an objective, unbiased fashion, that is honest about the nature and magnitude of scientific uncertainties.

That leads me to commentaries on the two specific bills, H.R. 2910, H.R. 3111. On H.R. 3111, which is very similar in many respects to Senator Moynihan's bill in the Senate, I have some detailed comments in my written testimony. I just want to react here to the testimony you heard earlier from Dr. Goldman that these things just require guidelines that we have already published.

Let me tell you about the EPA cancer risk assessment guidelines which were published in 1986, at the time of publication already under serious criticism. In 1988, EPA promises to go public and announces their intention to revise the cancer risk assessment guidelines.

I personally have been to three workshops by the EPA on revising the cancer risk assessment guidelines. We still have not a final revision. We don't even have a proposed revision of the cancer risk assessment guidelines.

The notion that EPA has already done what this bill asks may be true on exposure assessment, it may be to some extent true on non-cancer effects, but on cancer they are clearly not making rapid progress in the area of revising guidelines on the second bill, H.R. 2910, the Risk Communication Act.

I think this is a very unique initiative at fostering more accurate, complete, and consistent reporting of risk estimates. I want to focus on one particular requirement in the bill, and that is the one that asks people to compare—that asks the EPA to compare the risks that they are concerned about to the risks that people face in their daily lives.

Let me give you a sense of perspective on this. There are several bills in Congress right now trying to replace the outmoded Delaney Clause, and several of them would outlaw any pesticide whose estimated lifetime cancer risk to a food consumer is greater than one in a million.

What does this number mean? How large is this risk? It turns out that during this hearing there is a tiny, but non-zero chance that an airplane will miss National Airport, strike the Capitol, and take out several Members of Congress. I will tell you the same thing I said to the Senators, which was this is not term limits I am talking about, this is actual death, OK.

By way of comparison, at current mortality rates, a baby born today in his or her lifetime has not one chance, but about 5 chances in 1 million of ultimately suffering that unfortunate fate, and as

Dr. Goldman mentioned in her testimony, this is an actuarial risk estimate, not a speculative or extrapolated risk.

Now no one has seriously argued that children should always sleep in their basements in order to provide an extra margin of protection. More importantly, no one has argued that airplanes should be banned if they do not meet the one in a million trigger.

While the Federal Government does regulate the safety of airplanes to reduce this probability, no one has suggested that airplanes violating this number should be banned without even considering the loss of benefits to consumers of airline travel. When we regulate technology such as pesticides and airplanes and manufacturing facilities, it is important for EPA to provide the public a sense of perspective about how big these risks are compared to the risks that people face in their daily lives.

Let me conclude by addressing this point about whether these bills would be too burdensome on the Agency in terms of the analytical burdens and resource implications that we would provide. Congress should certainly not require EPA to perform a huge, complex risk analysis on every issue that they face.

Indeed, these bills as I read them would allow EPA to retain the discretion to tailor the intensity of the analysis to the importance of the particular issue at hand. Now, on the question of how fast EPA decisions will be, I think it is very important for Congress to be skeptical about claims that if we have more analytical requirements, the delays that we now observe are going to be much longer.

My experience in studying EPA is that when you have decisionmakers, like Lynn Goldman and Tom Grumbly, who have the will and courage to make decisions, they control the analytical process to make sure that timely decisions are in fact made. When these decisionmakers lack the will to make decisions, don't want to make decisions, they will blame their lack of determination on anything that is convenient, including risk analysis and analytical requirements.

In summary, I think it is very critical that Congress send a very strong message to EPA that sound risk assessment and communication are critical to the future of environmental policy in the United States. If Congress does not act, the message will be that business as usual at EPA is appropriate and I think it is not the signal we want to send.

Thank you very much for the time and I am happy to answer questions and take comments.

Mr. SWIFT. Thank you both.

[The prepared statement and attachment of Mr. Graham follow:]

STATEMENT OF JOHN D. GRAHAM, DIRECTOR, CENTER FOR RISK ANALYSIS, HARVARD SCHOOL OF PUBLIC HEALTH

My name is John D. Graham. I am Professor of Policy and Decision Sciences at the Harvard School of Public Health and Director of the Harvard Center for Risk Analysis. Thank you very much for the opportunity to testify today on the need for a rigorous and accurate process of risk assessment and communication at EPA.

EPA has estimated that Americans will soon be spending over $150 billion each year on environmental protection. Senator Moynihan has noted that while this is not necessarily too much to spend for clean air and water it is certainly too much to spend unwisely. When our Nation squanders scarce environmental protection resources on low-priority problems, we harm the environment be leaving higher priority problems unaddressed. How can risk assessment help us allocate these scarce resources?

Please let me begin by presenting each of you with the same quiz that I present to my students who study risk assessment and risk management at the Harvard School of Public Health.

You are a regulator at EPA and charged by Congress with doing the most you possibly can, subject to resource constraints, to protect the public health from environmental hazards that may cause premature death. Your scientific staff brings to your attention three hazards, A, B, and C, that could be eliminated through regulation but your Agency only has adequate resources this year to regulate two of them. Which two should you regulate? [Charts appear at end of statement.]

Hazard A is known to cause 100 premature deaths. Hazard B is 95 percent certain to cause no harm but there is a 5 percent chance that it will cause 1,000 premature deaths. Hazard C is 75 percent likely to cause 200 premature deaths but there is a 25 percent chance that no one will be killed. Assume that these are the best scientific estimates of risk that are possible (given the current state of the science), that the hazards are similar in all other respects, and you do not have the luxury of awaiting the results of further research.

One possible answer to this question, sometimes offered by students who seek to prevent the worst possible outcomes, is that hazards B and C should be regulated. Note that the "worst-case" estimates of risk are higher for hazards B and C than for A. But is this choice really the best use of our scarce resources?

The science of risk and decision analysis, which has developed guidelines for optimal decision making under uncertainty, urges you to give serious consideration to regulating A and C, even though the worst-case estimate of lives lost is largest for B. The rationale for this answer can be obtained by calculating the "expected number" of lives lost from each hazard, which equals 100 for A, 50 for B (1,000 x .05), and 150 for C (0.75 x 200 plus 0.25 x 0).

The general principle is that if our ultimate national goal is to maximize the total number of lives saved (or some other indicator of environmental protection) from regulation, then we should set environmental priorities not on the worst-case estimate of risk but on the "expected-value" of risk (sometimes called simply the "best" or the "central" estimate of risk). If you are inclined to regulate B instead of A, you may be (inadvertently) guilty of what my colleague Professor Howard Raiffa calls the act of "statistical murder"—consider the 50 extra people who are expected to die because you chose to regulate hazard B instead of A. Since Congress and EPA make these kinds of priority-setting judgments numerous times each year, it is important that information about probabilities and expected values be reported routinely.

Although the punch line to this example is that probabilities and expected values should be reported and considered, resource allocations decisions should not be based solely on the basis of the expected-value statistic. There are sound reasons for departing from expected-value decision making in certain situations such as concern for environmental equity and the need to prevent irreversible catastrophes. The key point is that risk assessors should present Congress and EPA with central estimates of risk as well as worst-case possibilities.

How, you might ask, does this method of reporting risks compare to what is currently done by risk assessors throughout EPA? Unfortunately, the various EPA program and regional offices do not report risk estimates in a consistent fashion (even though current environmental laws do not compel such inconsistency). Usually only one estimate of risk is reported. Some estimates reported by EPA are worst-case figures, some are conservative yet plausible estimates, some are central estimates, and some are simply impossible to interpret. Few agencies report the desired distributional estimates of risk. Moreover, there are many decision makers outside of EPA, such as States and localities, environmental advocacy groups, industry groups, and international bodies that may not appreciate the nature of the single risk number that EPA generally reports.

In this confused setting, it is very difficult for Congress and EPA's leadership, let alone users outside the Federal Government, to rank environmental hazards with a valid, consistent yardstick. While EPA is making efforts to correct this problem, the progress is slow and there are obvious institutional reasons why some program offices, fearing unfavorable outcomes, would be reluctant to report risk estimates in a consistent fashion. Let me stick my neck out and state the opinion that if risk estimates at EPA were reported on a consistent basis (e.g., expected values of population risk), then a variety of indoor and outdoor air pollution problems would be near the top of a comprehensive risk ranking, and various hazardous waste cleanup programs would be near the bottom of the risk ranking.

Sound risk assessment can play a useful role in helping America get "the most bang for its environmental buck", but to do so congress must insist that risk assessment be performed in an objective, unbiased fashion that is honest about the nature and magnitude of scientific uncertainties. I am enthusiastic about what prompt passage of H.R. 2910 and H.R. 3111 would do to help our Nation use its scarce resources more effectively to protect public health and environmental quality.

H.R. 3111 is similar in many respects to Senator Moynihan's bill in the Senate. Rather than make detailed comments here, I have simply attached to my written testimony the comments our Center made on the Moynihan bill. In short, the bill could be strengthened if risk-reduction opportunities (and their associated costs) were ranked in addition to the required ranking of baseline risks. Such rankings would be very useful to decisionmakers and the public who are interested in identifying cost-effective steps that could reduce environmental risks.

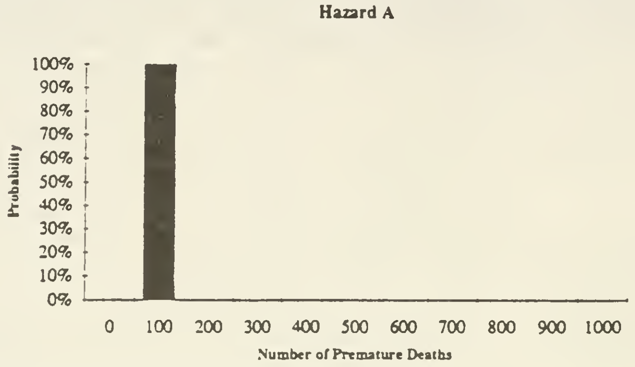
H.R. 2910, The Risk Communication Act, is a unique initiative aimed at fostering more accurate, complete, and consistent reporting of risks to decision makers and the general public. The two most important provisions in the bill are (1) the requirement that EPA report the nature and degree of scientific uncertainty in their risk estimates, a basic analytical practice that is done now only sporadically, and (2) the requirement that EPA compare the target risks of concern to other risks that people face in daily life. Since I have already mentioned (with the quiz above) why information on uncertainty is critical to resource allocation, let me focus now on why a sense of perspective from risk comparison is helpful.

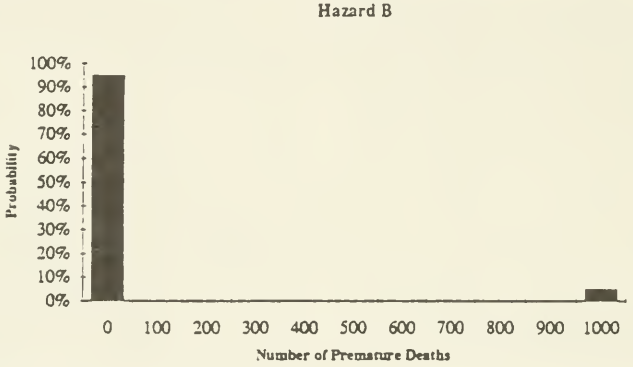
Take the challenge of replacing the outmoded Delaney Clause with sound pesticide regulation. There are now bills in Congress that would outlaw any pesticide whose estimated lifetime cancer risk to a food consumer is greater than one in a million. How large is this probability? It turns out that during this hearing their is a tiny but nonzero chance that an airplane will miss National Airport, crash near the Capitol, and strike several Members of Congress. By way of comparison, at current mortality rates a baby born today has not just one chance but five chances in a million of being killed on the ground by a crashing airplane in his or her lifetime. No one has seriously argued that children should always sleep in their basements in order to provide an extra margin of safety. More importantly, no one has argued that airplanes should be banned if they do not meet the one-in-a-million trigger. While the Federal Government does regulate the safety of airplanes to minimize this probability, no one has suggested that airplanes violating this number should be banned, without even considering the loss of benefits to consumers of airline travel. When we regulate technologies such as pesticides and airplanes, it is important for analysts to provide the public a comparative perspective about the magnitude of risks to be imposed on the public as well as a sense of the benefits to citizens that result from use of the technology. Risk comparisons, when provided by analysts, should be sensitive to qualitative differences in risks such as voluntary versus involuntary risks and human versus ecological risks.

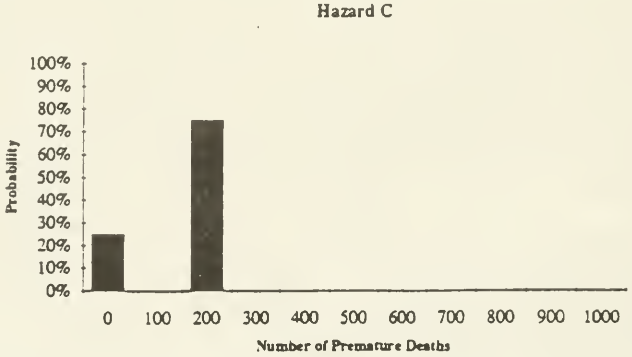
In assessing the potential analytical burdens that new legislation would impose upon EPA, it is important to be realistic. Congress should not require EPA to perform a huge, complex risk analysis on every issue. EPA should retain the discretion to tailor the intensity of the analysis to the importance of the issue at hand (measured in both environmental and economic terms). At the same time, Congress should be skeptical of claims that the slow pace of decision making at EPA is attributable to analytical requirements. When decision makers have the will and courage to make decisions, they control the analytical process to make sure that timely decisions are made. When decision makers lack the will to make decisions, they will blame their lack of determination on anything that is convenient, including analytical requirements.

In my earlier study of the slow pace of regulation under the Clean Air Act, I found that the unrealistic statutory goals set by Congress were a more important factor in EPA's reluctance to regulate "hazardous air pollutants" than were the analytical processes of risk assessment and benefit-cost analysis. For example, non-threshold pollutants, such as many agents shown to cause cancer in workers and animals, are very difficult to regulate under a statutory scheme that requires EPA to protect the public health with "an ample margin of safety." Since the only ample margin of safety for non-threshold pollutants might be zero exposure, EPA was understandably reluctant to list agents as "hazardous" under the 1970 Clean Air Act Amendments. The 1990 Amendments have sidestepped this issue temporarily through technology-based standards but the residual-risk issue remains to be resolved.

In summary, it is critical that Congress send a strong message to EPA that sound risk assessment and communication are critical to the future of environmental policy in the United States. if Congress does not act, the message will be that "business as usual" at EPA is appropriate. Thank you very much for the opportunity to testify today, and please let me thank my colleagues Joshua Cohen, George Gray, Susan Putnam, March Sadowitz and Andrew Smith for their assistance in preparing this testimony.


Hazard A


Hazard B


Hazard C

Mr. SWIFT. Just a couple of brief questions. First, Mr. Moore, in your testimony you say we shouldn't allow cancer to dominate regulatory activity at the expense of other adverse effects. Is that the situation we have got on our hands right now, cancer dominates?

Mr. MOORE. Historically cancer dominates health-related issues, including those of risk assessment, not just at EPA, but throughout this whole government. I am struck by the number of our European colleagues who often shake their head and can't understand this fascination or phobia with cancer.

So you end up with a tremendous focus over here, say on cancer, and I am not suggesting we ignore cancer by any stretch of the imagination, without then devoting I think sufficient amount of time and concern for other types of health concerns, whether they be birth defects, neurologic damage or whatever they may be. I think it is quite clear that over the last 10 or 15 years, cancer has dominated, particularly in the area of quantitative risk assessment and has been most controversial. There is a beginning trend, I think, to start to maybe bring things into a greater balance.

Mr. SWIFT. We are getting off the subject a little bit, but many of the AIDS activists argue that we are not putting sufficient emphasis on research in that particular area. Yet we seem to have appropriated a lot of money.

From your perspective, which is a good one, I think, to answer this question, do they have a point or are they just emotionally involved or are we doing what we should in terms of research in AIDS, given what you said about cancer?

Mr. MOORE. Well, you know, it becomes—when you get into issues like this, Congressman, I think as you very well know, it becomes very much a value laden judgment. Are we spending as much money on AIDS as we should in relation to the amount of money we are spending on breast cancer research or colon cancer research or vaccination of children or whatever the case may be, all of which obviously have risk-related issues.

I don't know how to answer that.

Mr. SWIFT. If we take what you said about cancer, do we seem to be making the same kind of effort on AIDS that we are on cancer generally speaking?

Mr. MOORE. Well, you know, I think something we have to acknowledge in the issue of AIDS, and that is unfortunately we know the outcome. The outcome is in a relatively short period of time if somebody has AIDS and they start into a clinical symptomatology, they are going to be dead.

Much of the cancer risk estimation that we might do over some theoretical exposure to a chemical doesn't—as Mike Gough was saying—it is the hypothetical outcome or something like that. So I think to the degree that we are putting money in AIDS research, to the degree that we are, it is because I think of the magnitude of the people that are so exposed and are going to die, as well as the fact that it is a very real outcome.

It is not a hypothetical outcome. So I am not convinced that we are spending far too much money on AIDS. What I do think we possibly have been doing in the area of regulating cancer risks based on chemical exposure using these quantitative estimates or risk assessment in one form or another, yes, I think we can probably cite a number of instances where we are overregulating because we have allowed the process to end up with what I would say are gross overestimates for a variety of reasons you have heard either by us or by the previous panel.

Mr. SWIFT. Thank you.

Dr. Graham, I think you make a very important point for us if we are considering legislation, that is that EPA is trying to change, it is a moving target, coming along and requiring that they do something that they have just done is probably kind of pointless. Having followed the Agency in its efforts over time, and listing some of the impediments there are in some areas, still, do you have kind of a rule of thumb that the committee could use in drafting legislation so we don't make it redundant and kind of stupidly directive in areas where they have, and yet get speed up on a more transparent, more open and scientific process of risk assessment?

Mr. GRAHAM. Well, actually, the duplication issues are of less concern to me. I am having conversations with EPA scientists and risk managers about the bills that we are talking about today. It is interesting, the kind of reactions you get.

On the one hand, you hear the argument that we are already doing all these things, why are you requiring us to do what we are already doing? On the other hand, they will argue to you that these things add enormous layers of extra expensive analytical requirements, they are going to drag out decisions for 2 or 3 years.

I think the only real solution to this is the question you asked of the previous panel, please tell us for each specific provision in these bills are you already doing this or not, if are you not doing it how much would it cost to do it, and cost in terms of both money and time. My own rule of thumb would be to tell you is that if they are going to argue it is going to delay decisions, usually delay of decisions is due to a reason other than the analytical requirements. It is due to how much motivation they have to make a decision.

Mr. SWIFT. OK. That is helpful.

The gentleman from Ohio.

Mr. OXLEY. I am sorry, Mr. Chairman. I can't get 2 minutes on the NAFTA debate.

Mr. SWIFT. They won't give you two?

Mr. OXLEY. No. Would you grant me 2 minutes?

Mr. SWIFT. Sure.

Mr. OXLEY. I got 45 seconds on the spectrum auction and the budget bill reconciliation, 45 seconds for a $7.5 billion program, so I am a little hot under the collar right now.

Mr. Moore, I appreciate your testimony, it has been very helpful. Mr. Moore has an excellent background from looking at his career as a research toxicologist and program manager at the National Institute of Environmental Health Sciences, about 5 years as a Deputy Director at the National Toxicology program, and 6 years at the U.S. Environmental Protection Agency as Assistant Administrator for the Office of Pesticides and Toxic Substances and Acting Deputy Administrator, and for several years he chaired the EPA's Risk Assessment Council, so he knows of what he speaks; and obviously Dr. Graham does as well.

Dr. Graham, would you please explain again why it is important for Congress and other policymakers to set environmental policies on the expected value of risk and not on the worst case estimate of risk?

Mr. GRAHAM. Yes, the concept of an expected value is one that has a very strong analytical tradition in decision analysis and risk analysis. What I have done for the committee and the staff is in my written testimony I have attempted to embarrass you with a quiz that I give my students who take risk assessment and risk management at the Harvard school of public health.

What I do is ask you to look at three hazards, A, B and C, and I give you a probability distribution on how many people will die from each of those hazards. What I try to induce you to do is choose the ones that have the highest worst case estimate of risk, and spend your resources on those, and then I try to persuade you that if you had used the expected value estimate of risk in the long run you would have saved more lives and done more for the environment than focusing exclusively on the worst case estimate of risk.

So I think it is very important not that Congress say you are not allowed to report worst case estimates of risk, because Congress and EPA should learn about the worst case possibilities. But we should also give central estimates of risk and my written testimony gives a substantial amount of material in support of that position.

Mr. OXLEY. So in layman's terms, the best estimate would really save more lives.

Mr. GRAHAM. Over many decisions. If you look over 50 decisions or a hundred decisions, if Dr. Moore were to choose to make decisions solely on the worst-case estimate, which I am sure he wouldn't do, and if I were to make the decisions based upon the expected value, you can show quite directly with the law of large numbers that I am going to save more lives in the long run than he is.

It is a widely misunderstood point among people who think they are advocating on behalf of public health and the environment when in fact the worst-case estimate of risk will not do the most with our scarce resources for environmental and public health protection.

Mr. OXLEY. Mr. Moore, you say in your testimony the results of efforts to quantify certain cancer risks in the United States can differ from the results of similar efforts in Western Europe by 100 to 1,000 times. You go on to say in your testimony that this difference has the potential to become a non-tariff trade barrier.

It is interesting that that would come up today. Would you explain why there is such a big difference in cancer risk assessments and what we can do to reconcile those differences?

Mr. MOORE. Congressman, I think the major difference is that most, for example, European countries, western European countries, have never bought into the wholesale application of multi stage modeling which has become the common way or the traditional default mechanism for making cancer risk estimates in the United States. They just won't do it, with one possible exception, and that is chemicals in which they have data to suggest that they may cause cancer because they directly affect our genetic makeup.

They would use a model such as I described. They basically are so skeptical of the use of the linearized model that is routinely used in the United States that we end up with these large discrepancies in numbers. I also think that there is a—that the acceptability of this approach in the United States is also being questioned more vociferously over the last several years by people within the scientific community.

There is a place for it to be used, but I think where we have made a mistake is its rote overuse.

Mr. OXLEY. Mr. Moore, you say in your testimony that the overuse of so-called default assumptions can erode the certainty of the judgment or the accuracy of the quantitative estimate. Would you explain how this happens and if there is any way to prevent it?

Mr. MOORE. Well, it is something that was touched upon I think by the first panel as well, and that is if you make a cascading series of default assumptions in trying to put together a risk assessment, you can end up with an outcome that when you step back and take a hard look at it, it almost doesn't pass the laugh test. You end up building assumption upon assumption upon assumption, and end up with a number that I don't think is defensible.

Now there is a place for doing that. You can in many instances do what I just described and despite that you can still say based on the pattern of exposure, nobody's still at risk. So despite making all of these draconian assumptions, you can be reassured that there is no effect. So it has a back of the envelope utility.

I guess what bothers me is that when a risk assessment is brought to a decisionmaker that is replete with these cascading assumptions, that the fact that those cascading assumptions have been used is not made apparent to the decisionmaker, I think is wrong.

Mr. OXLEY. Dr. Graham, do you have a comment on that as well?

Mr. GRAHAM. Yes. I think the Risk Communication Act, the one that focuses on improving the way these scientific risk estimates are reported to the decisionmakers and the public, I think it has very good provisions to address the problem that Jack just put his finger on. I really think that that is the strength of that particular piece of legislation and I would encourage that be given serious consideration.

I think we should ask EPA quite directly what they are doing about this problem, have they solved this problem. My judgment is they haven't, though certainly there are some efforts in that direction.

Mr. OXLEY. Thank you. Thank you, Mr. Chairman.

Mr. SWIFT. I thank the gentleman. We thank you very, very much for your contributions to the committee and we might well be back to either of you as we continue examining this issue.

Our last panel includes the Hon. Gregory Lashutka, Dr. Peter deFur, and Mr. Jim Wilson. We thank you very much. As you know, your formal statements have already been made part of the record. We would be happy to have you proceed as you wish. We will begin with the Mayor of Columbus, Ohio.

STATEMENTS OF GREGORY S. LASHUTKA, MAYOR, COLUMBUS, OH., ACCOMPANIED BY BEN MAIDEN, VICE PRESIDENT, OPERATIONS, BATTELLE; AND RICHARD HICKS, PROJECT DIRECTOR, COLUMBUS HEALTH DEPARTMENT; PETER L. deFUR, SENIOR SCIENTIST, ENVIRONMENTAL DEFENSE FUND; AND JAMES D. WILSON, REGULATORY DIRECTOR, MONSANTO CORP.

Mr. LASHUTKA. Mr. Chairman, thank you very much.

I would like to also extend a warm welcome to Congressman Oxley from Ohio and note my respect for the great State of Washington. I will try to keep my remarks a little bit brief, but there are a few points if I could, Mr. Chairman, hopefully provide in context of the two pieces of legislation primarily on which you convene the subcommittee.

Joining me is a good friend, Mr. Ben Maiden, who is the Vice President of Operations at Battelle, and he also serves on our environmental science advisory committee, which I would like to talk about a little bit later, and also Mr. Richard Hicks, who is head of our environmental section within the Department of Health for the City of Columbus.

Last week the brotherly Mayor of Philadelphia and myself joined with the Senate Committee on Governmental Affairs to provide a perspective on unfunded mandates. At that time, we talked about the crushing cost of those mandates and how in many of the judgment of those of us, the local level, we feel a fundamental issue on the principle of federalism on which our country was found were at issue.

Additionally, that the issue of an inflexible process that is really being driven home to those of us at the local level really can produce absurd results or even counterproductive results at a local level. I am pleased that the Congress is looking at the issue broadly of unfunded mandates. It affects people from Washington to Ohio and all four points of our country.

I am even more encouraged, however, that this subcommittee and the committee overall is taking a serious look at environmental risk assessment. Because risk assessment is part of a new improved strategy for improving our better mental health in the City of Columbus and we believe it is important for all parts of the country.

Earlier this May, a number of the governing groups who are associations for local government convened in Columbus. At that time, some basic principles were locked into, and if I could, those four principles include that, one, that environmental legislation and resulting regulation be formulated on a well-founded peer review science base is critical.

Two, that all governments be able to prioritize their resources to achieve the best results in utilization of the local tax dollars expenditures for achieving the best environmental risk reduction.

Third, that there be flexibility for consideration in local conditions and that this flexibility be incorporated as a matter of procedure into the Federal and State regulatory process. And lastly, that the local governments be afforded an opportunity for fuller participation in the Federal and State legislative and regulatory process.

Consistent with that, we appreciate your invitation to join with you today.

Before I comment on risk assessment, however, I want to give you an exam, if I could, on why the command and control top down process of mandates sometimes badly undermines the purposes of a positive environmental protection effort. I am sure we all remember the outbreak of the illness in Milwaukee earlier this year caused by cryptosporidium in the water supply, one that caught the attention of all the country.

I can assure you that other than a riot or a civil disturbance or a fire storm or other natural disaster, no greater nightmare is there for a mayor than contamination of our water supply. And even though immediate steps were taken to correct the largely human error, seven good people died. Equally importantly, damage to public confidence eroded.

Currently, the classic case of covering one's rear end and locking the barn door after the horse is gone is teasing all of us. The U.S. Environmental Protection Agency is, I think based on good reason, considering an order, however, for every city to test their raw water supply for cryptosporidium and virus. Not the treated water that comes to each of the households in our city, going out to our customers, but rather the raw water supply.

The purpose is to see how pervasive this problem is so they can consider whether a new mandate on water treatment process is appropriate. What that means for those of us in Columbus is this. The cost of testing would range somewhere between $50,000 and $144,000.

A test that would be required by the EPA to turn around and make an appropriate judgment, as Dr. Loehr previously mentioned, to provide the knowledge, but at the expense of those of us in Columbus and other cities, which will ultimately be added to water and sewer bills.

My objection is this: We already have a multi-barrier water treatment process that in our judgment removes cryptosporidium and the viruses and other microbes, and our city is not alone when compared to others. If we did the testing and found the cryptosporidium in our water supply, I am sure the media may run the same stories we heard about apples that really later were not justified.

It would not be about the water going to their household, but rather about the water that would be in our supply that we believe we treat. My point simply is this, that the dollars for cryptosporidium testing in Columbus would literally be money down the drain.

I know that the EPA people are well intentioned, but in their effort to avoid being accused of inaction, they are overreacting to something that may not really be a national problem. To borrow a page from President Clinton and Vice President Gore's National Performance Review, if I could, "In Washington's highly politicized world, the greatest risk is not that of a program that will perform poorly, but that a scandal will erupt. Scandals are front page news, while routine failure is ignored. Hence, control system after control system, the cascading we heard earlier, is piled up to minimize the risk of scandal."

Two more sentences from the report get right to the heart of what we feel is part of the mandate problem. Even though they refer to funded mandates, the reality is there are no such things as a general rule any more. Because we don't want State and local governments using Federal funds for purposes that Congress did not intend, we write regulations telling them exactly how to run most programs that receive Federal funds. We call for their partnership in dealing with our country's most urgent domestic problems, yet we do not treat them as equal partners.

The reason the current process doesn't work is simply this: Many of the Washington bureaucrats look at my city and all cities through straws. There are very detailed looks at each subject such as underground storage tanks or storm water runoff. The tunnel vision does not allow us, and in many cases business, to see how each regulation affects the others, nor the cumulative impact or the cascading we talked about as we see how it comes together.

When an agency looks at Columbus, Ohio, they see tail pipes and landfills, lead in the water, or asbestos in buildings. Many times they can't see the broader picture, the very issue that brings you all together and inviting us today. They do not see our community as a whole or have a knowledge of our priorities, and they may be blind to some of the bigger threats in our public health in our particular city versus others. And yet, those of us who are mayors or council members are mayors for all cities, whether it is Findlay, Ohio, or your district back in Washington, or Columbus. We have 650,000 people and the "one size fits all" philosophy doesn't work.

President Clinton in Putting People First said, "It is time to radically change the way the government operates. A shift from the top-down bureaucracy to the entrepreneurial government that empowers cities and communities to change from the bottom up." Our community took a page from what you are discussing and we have already begun that process. It may be an example that we respectfully would offer for your consideration.

We earlier started—and Mr. Maiden is the Vice-Chair of our Environmental Science Advisory Committee, 18 scientists and educators and engineers and other professionals, whose purpose is as follows: "The committee will comment to the mayor and city council and the Columbus Health Department and the city's Mandate Review Committee on the scientific basis and relevancy of any mandated Federal and State environmental legislation/regulations, or other matters related to the environment and environmental protection.

Without lingering on that, we took it a step further, and just as Mr. Moore mentioned that government has to let go, we have done that. We have taken the guts to set priorities and we formed a committee called Project 2,000—Priorities 95. The Priorities 95 committee was formed to consist of the people on the Environmental Science Advisory Committee, technical people and general public, citizens in our community, because the environmental protection issue is not just a question of science as we have heard, but rather of priorities and values that are important for our community.

The committee's task is to identify the real environmental risks facing our community, rank these in order of severity, determine whether current governmental policy exists to reduce these risks, and determine a comprehensive strategy for assessing the risks.

A key part as you have heard is education, education because the public must understand and accept a strategy that involves their tax dollars and they must then be willing to support it with their tax dollars. I believe, as was mentioned by Dr. Loehr on demystifying the issue, and Tom Grumbly, that we need to have public confidence because in many cases it is not there.

That reality check means bringing them to the table and having them help us to break that gridlock between the Federal and the State and local government. You have heard about all politics being local and that certainly came from one of the distinguished Members of this House.

Well, all environmental issues in my judgment are local, too, especially in a country as large as ours. We have made huge and good strides over the last 20 years in improving our environment. By restricting point source problems, the battlefield has now shifted in the judgment of many of us to more complex, subtle and costly problems.

For future improvement to be made, each community must have the ability to go through comparative risk assessment, in partnership with the State and Federal Government, not excluding this, to maximize the extent of our tax dollars. I won't comment on either of the two pieces of legislation because I am not qualified to do that. I have not read them, but I do thank you for the opportunity to come before you and hopefully as we build this new trip, our partnership from the Federal and State, local level, we can not only better protect the environment, we can also reduce the cost of the services and make government more accountable as well as responsive to the people we serve, whether it is at the Federal, State or local level, because they all group us together.

Thank you very much, Mr. Chairman.

Mr. SWIFT. Thank you very, very much. We will be getting to questions very shortly.

[The prepared statement of Mr. Lashutka follows:]

STATEMENT OF GREGORY S. LASHUTKA, MAYOR, COLUMBUS, OHIO

Thank you, Mr. Chairman, for the opportunity to testify on the subject of environmental risk. Two weeks ago, I testified before the Senate Committee on Governmental Affairs on the perspective of cities toward unfunded Federal mandates. I spoke of the crushing cost of these mandates, how they violate the principals of federalism upon which this country was founded, and how the inflexible process through which these mandates are created can produce absurd, or even counterproductive, results at the local level.

I am very pleased that the issue of unfunded mandates is now being viewed in Congress as a major problem. I am even more encouraged, however, that this committee is taking a serious look at environmental risk assessment, because risk assessment is part of a new and improved strategy for improving environmental health in a sensible way.

Before I comment on risk assessment however, I want to give you an example of how the old command-and-control, top-down process of mandates is badly undermining the cause of environmental protection. I am sure you all remember the outbreak of illness in Milwaukee earlier this year caused by cryptosporidium in the water supply. I can assure you, other than a riot or firestorm, there is no greater nightmare for a mayor than a contaminated water supply. Even though immediate steps were taken to correct the largely human error, seven people died, and the damage to public confidence was done.

Currently, in a classic case of covering their behinds and "locking the barn door after the horse is gone," the U.S. EPA is considering an order for every city to test their raw water supply for cryptosporidium and viruses. Not treated water going out to customers, but raw water coming in to the treatment plant. The purpose is to see how pervasive the problem is, so they can consider whether to mandate new water treatment processes.

In Columbus, the cost of this testing would be $50,000 to $144,000. We may be forced to pay for testing that the EPA would turn around and use to regulate us. Our objection is this: we already have a multi-barrier water treatment process that removes cryptosporidium and other microbes, and our city is not alone. If we did the testing and found cryptosporidium in our water supply, I am sure the media would run frightening stories about how our drinking water is at risk. But as I have just stated, it would not be at risk, because our treatment process is more thorough than Milwaukee's.

My point is that the dollars for cryptosporidium testing in Columbus would be literally money down the drain. I am sure the EPA people are well-intentioned. But in their effort to avoid being accused of inaction, they are overreacting to something that is not a national problem.

This is a recurrent theme in President Clinton's and Vice President Gore's National Performance Review. Let me quote from it: "In Washington's highly politicized world, the greatest risk is not that a program will perform poorly, but that a scandal will erupt. Scandals are front-page news, while routine failure is ignored. Hence, control system after control system is piled up to minimize the risk of scandal." Two more sentences from the report get right to the heart of the whole mandate problem, even though they refer to funded mandates: "Because we don't want State and local governments using Federal funds for purposes that Congress did not intend, we write regulations telling them exactly how to run most programs that receive Federal funds. We call for their partnership in dealing with our country's most urgent domestic problems, yet we do not treat them as equal partners."

The reason the current process does not work is quite simple. Each Washington bureaucracy views my city by looking through a soda straw. They take a very detailed look at a subject, such as underground storage tanks, or stormwater run-off, etc. Their tunnel vision does not allow them to see how each regulation affects the others, nor do they comprehend the cumulative impact and cost at the local level.

When an Agency looks at my city, all they see are tailpipes, or landfills, or lead in the water, or asbestos in buildings. They are unable to see the big picture. They do not see our community as a whole, or have any knowledge of our priorities. They may be blind to some big threat to public health in our particular city, but that doesn't show up in some national average.

Yet I am the mayor of an entire city, and I have to balance the needs and wants of 650,000 people. The command-and-control approach from Washington is therefore not only wasteful, it is also often ineffective in its stated goal of providing environmental improvement.

There is a better way. As President Clinton wrote in Putting People First: "It is time to radically change the way the government operates—to shift from top-down bureaucracy to entrepreneurial government that empowers citizens and communities to change our country from the bottom."

In Columbus, we have already begun. This year we launched a 2-year community-wide program of environmental risk assessment. Our goal is simple: to achieve the maximum reduction of environmental risk to public health for the dollars spent.

The committee we have formed consists of both technical people and the general public, because environmental protection is not just a question of science, but of public priorities and values. The committee's task is to identify the real environmental risks facing Columbus, rank these risks in order of severity, determine whether current governmental policies exist to reduce these risks, and determine a comprehensive strategy for addressing these risks. A key part of this project is public education, because unless the public understands and accepts a strategy of environmental protection, they will not be willing to support it financially.

You know that "all politics is local." Well, all environments are local too, especially in a country as large as ours. We have made great strides in the last 20 years in improving our environment nationwide by restricting point sources. The battlefield has now shifted, though, to more complex, subtle, and costly problems. For future improvement to be made, each community will have to go through a comparative risk assessment to maximize the effect of available dollars.

The Federal role should be one of measuring results: how much pollution is reduced, rather than prescribing how it should be done. The Federal Government would also do everyone a great service by scientifically determining the substances and maximum exposure levels that can be harmful to human health, so that we can remove the almost-weekly outbursts of hysteria that surrounds the necessary use of chemicals in everyday life.

I thank you for the opportunity to discuss this situation. By building a new partnership between all levels of government, I believe we can better protect the environment, reduce the cost of services, and make government more responsive, as well as accountable, to the people we serve.

Mr. SWIFT. I would like to recognize now Dr. Peter deFur, who is a senior scientist with the Environmental Defense Fund.

STATEMENT OF PETER L. deFUR

Mr. DEFUR. Thank you very much.

I will keep my comments brief, and as the other speakers have, I have also edited mine and hopefully I haven't added too much extra material at the end. At the end, I would like to respond, Mr. Chairman, to your question about the role of disagreement in science.

I am Peter deFur, Senior Scientist with the Environmental Defense Fund and Associate Professor of Environmental Studies at Virginia Commonwealth University. Today I am offering comments on behalf of the Environmental Defense Fund. I won't go through the details that you have already heard about what risk assessment is and what risk assessment does. I will offer some perspective from some of my constituents.

The Environmental Defense Fund being a national nonprofit organization, with over 200,000 members, is also involved in ongoing discussions regarding risk assessment and toxic chemicals with not only our members and our staff, but also other members of the environmental community. It is apparent that a complete and accurate risk assessment from the perspective of those people clearly is a data intensive effort that requires extensive knowledge not only of a chemical or of a suite of chemicals, but also the conditions under which an exposure occurs, the animals, the plants, the ecosystems, basically a veritable plethora of information that is really required to do one of these things, a risk assessment, correctly.

Controversies arise when there are assumptions regarding some of those data, some of the information, either how they are used or what happens in the absence in some of those data. In point of fact, in many cases all of the data are not available to complete that risk assessment process as ideally constituted; that is, we don't have all of the information on what happens to endpoint X, endpoint Y, or endpoint Z, and certain assumptions must be made.

Those assumptions generate controversies, they generate controversy between the regulated community, the nonregulated community, the advocacy community, and they generate controversy within the public's mind and the public debate. Such controversies will arise regardless of the accuracy of the data when certain facilities are sited in a neighborhood or near a neighborhood.

The public is scared and they are justified in being scared. They are concerned over toxic chemicals and nobody can blame them for that. This is where the communication effort is so important to let the public understand the nature of the hazard, the nature of the exposure, the nature of the risk.

The greatest concerns that the environmental community has, especially at the national level, arise less from these site specific communication issues which can be solved, than on what happens had they taken those same procedures and practices that are used in risk assessment and applied them to policy issues.

The concern over application of risk assessment to policy issues is justified by the very nature of risk assessment. It is quantitative. It is mechanical, it is numerical. It is intended to provide some number based on a large amount of data with known models and known equations. Therefore, it is not appropriate for value decisions that are the important part of policy recommendations.

Risk assessment does, however, have a great deal to offer in terms of those cases where we have the information. EPA and some of the other Federal agencies have demonstrated that time and again, and where they have done it best, they have done it with the intent of protecting.

The intent of a risk assessment is to take the best information available, and with that information provide some sort of benchmark on how to protect, not how to come close to protection, not how to nearly protect, but to protect.

It is not a benchmark that is intended to be missed. In my testimony, I point out that it is not unlike trying to catch a plane. When you leave to go to the airport, you don't want to come close to the departure time, you want to get there beforehand. You are taking this effort in order to protect, so that there is not adverse impact to the public or to the environment.

The pitfalls of risk assessment as you have already heard are inappropriate or unwarranted use of assumptions where they cannot be justified, where the data are not there and some extrapolation has to be made and therefore you use the best available information.

I also cite an example of where EPA, based on their use of assumptions that have been applicable for most cancer risk assessments, have applied a number of those assumptions for neurotoxins. Most of them, if not all of them, are completely inapplicable, answering again one of the questions you asked earlier, haven't we been driven excessively by worries over cancer and therefore most of our risk assessments have been driven by cancer.

Yes, the answer is true. When we take the cancer assumptions, we apply them to something like birth defects, neurological problems. They don't apply, and we shouldn't apply them. Therefore they do need to be adjusted.

We do need to make the assumptions appropriate to the endpoint. There are things that risk assessment cannot do and EPA alluded to some of them.

There are three general categories where risk assessment falls woefully short of the mark. Number one is testing risks or assessing risks for the non-average human. That is, what do we do about children, about people who have a greater susceptibility? It includes African-Americans. It includes Native Americans.

What do we do about non-human endpoints, ecological risk assessments? We have just begun to scratch the surface with information even on our maximally charismatic vertebrate. That is the bald eagle or the warm and fuzzy wildlife species. We know more about them, but we know very little about a large number of plants and animals out there.

We cannot even begin to assess the risks for those animals, and then what do we do, and that this is the biggest gap, about multiple exposures and multiple chemicals? We cannot begin to know whether these have additive effects, do any of them cancel out? Does the exposure to one chemical at one dose at one time in life make a much lower exposure to another chemical worse at a later time in life? We don't understand those.

What I am driving at there is that we need the information in order to be able to refine that tool. This brings me to almost the last point, and that is what can legislation do. I don't think that there is any reason to believe that at present there is a legislative fix that is needed or in fact appropriate for the current risk assessment guidelines as we are operating.

The National Academy of Sciences is now completing a study of risk assessment and I think it is going to answer a lot of the questions that are posed by the current legislation. There are, however, things that can be done from the legislative arena that will improve the tool.

As I referred to, there are areas where we don't have the information and we don't have the tools that we would like to have to better use risk assessment, as a number of speakers have already pointed out.

Finally, I would like to point out, make a brief comment on the role of disagreement in science. We are talking about risk assessment as a science, and as a technical field. We are asking scientists and technical people to provide us information, data, equations, models, a lot of technical information. That information depends—the improvement of that information depends upon the advancement of science.

The advancement of science depends fundamentally on disagreement. When scientists start to agree on everything, progress will stop. Scientific progress will come to a grinding halt. Theories and hypotheses will not be tested if everybody agrees they are true. Scientists thrive on that, scientific progress depends upon it. It does not mean that scientists and the scientific community will not agree on certain fundamental things.

Certainly I think every scientist who has been here today will agree with that point, but I think they will also agree that to expect scientists to agree fundamentally is an error. We must not ask them to do that and in fact we must expect them to continue to challenge each other and to question and to make progress. That is where we make scientific progress.

Finally, the cost question has come up in a number of cases here. I urge this body to consider this cost question very carefully. Dr. Needleman, who is an expert on lead poisoning, pointed out in an NIH panel not too long ago that the estimated cost for lead abatement is on the order of $23 billion in the United States.

The estimated return is on the order of $50 billion, because we know it will result in an improvement in IQ of our children and a reduction of attention deficit hyperactive disorder, ADHD, severe learning disabilities. So when we take cost into account, it is not only that we must take into account the cost of the regulation and the benefit of the regulation, but what is the cost of not regulating?

I will be happy to answer any questions. I appreciate the opportunity to comment and to engage in this debate on risk assessment.

Mr. SWIFT. Thank you very much.

[The prepared statement of Mr. deFur follows:]

STATEMENT OF PETER L. DEFUR, SENIOR SCIENTIST, ENVIRONMENTAL DEFENSE FUND

Good morning. I am Peter deFur, Senior Scientist with the Environmental Defense Fund and Associate Professor of Environmental Studies at Virginia Commonwealth University. Today I am presenting comments on behalf of EDF.

The Environmental Defense Fund, a leading, national, NY-based nonprofit organization with over 200,000 members, links science, economics, and law, to create innovative, economically viable solutions to today's environmental problems.

I am pleased to have the opportunity to testify today and welcome the public debating of the issues surrounding risk assessment, particularly at EPA. I will be summarizing the written comments that I have submitted for the written record.

The topic of risk assessment has become increasingly controversial in recent years, as EPA has proceeded with implementing the requirements of numerous Federal environmental laws. The controversy has arisen from two vastly different interests: the regulated community and the grass roots environmental community. The regulated community that has been held responsible for risks to human health has complained that all risks are not equal and deserving of the same level of attention. Furthermore, industry has complained that when a risk assessment identifies "trivial" risks, according to, their definition, the no action option is justified. These discussions have been especially heated in the context of Superfund cleanups. The public, on the other hand, has felt that risk assessment has been used by industry and EPA, to escape cleaning up or regulating a problem or activity that needs attention. The public also complains that the mere use of risk assessment is a form of intellectual "elitism" because of the sophisticated processes and complex calculations involved.

The controversy and debate is, however, even more complex, heated and emotional than noted above. In fact, volumes have been written on the debate over risk assessment, apart from the substance and practice of assessing risk. In taking up legislation on risk assessment, Congress steps into a veritable quagmire of technical and policy issues on risk assessment and the environmental component of human health risks.

There are two clear sides to this issue, and to ignore the polarization between the two sides is to ignore the lessons of history. In this testimony, we do not attempt to bridge the gap between the parties in the risk assessment debate, but seek to identify some of the more salient strengths and weaknesses in risk assessment policy and practice at EPA. We include our perspective on the role of legislation in determining risk assessment at EPA.

Risk assessment, or more properly quantitative risk assessment, quite simply, is the process of assigning numbers to the probability and magnitude of harm or adverse effect from an event or activity. There are four steps in the process of assessing a risk:

—hazard assessment, or effects assessment to identify the end points or health problems that could result;

—exposure assessment, to identify the source(s) of the harm, whether a chemical or an activity;

—dose-response determination to provide a numerical description of what exposure level causes a certain degree of effect or harm;

—risk characterization in which the first three steps are combined to indicate the nature and severity of risk to either humans or the environment, or both.

The public is often confronted with news stories, public information brochures and pamphlets that refer to risk, or "risk assessment", yet few ever clearly define either term. At the same time, State and Federal agencies are using "risk assessment" more often in regulatory proceedings. Federal laws and policies increasingly incorporate "risk assessment" into required procedures and regulations, and the present hearing is evidence of the extent of Federal attention given the topic.

The parts of an RA are only sometimes well known, as exemplified by the risks presented by toxic chemicals. An ideal hazard assessment identifies all possible adverse effects on individuals and, in the case of non-humans, animal or plant communities. The exposure assessment determines the ways in which the chemical reaches the individual(s) and the duration and nature of that exposure. A dose-response relationship describes the mathematical relationship between the exposure to the chemical (the dose) and the adverse effect (the response). The final risk characterization takes everything into account, considering such factors as the innate toxicity of a chemical and the reliability of predictive mathematical models and pollution control equipment.

Most risk assessment's are performed to protect humans from the effects of toxic chemicals, especially carcinogens. Certain assumptions are made about the chemical release (time, duration, concentration) and the human population (body weight, age, sex, health). Additional assumptions must be made to use the results of laboratory research on experimental animals (rats, mice, hamsters, etc.) to protect humans. The risk assessor also must determine what harm to protect against, e.g. cancer, birth defects, neurological damage, etc. Finally, the risk assessor must use some level of protection—usually one in million. This last number, one in a million, refers, in the case of cancer, to the number of additional cancer deaths that might reasonably be expected from such exposure (over a lifetime, and for an average person).

Unfortunately, a complete and accurate risk assessment is a data-intensive effort, requiring extensive knowledge of the chemical(s), or event, the environmental conditions, and the animal(s) and plants affected. This information is rarely, if ever available at the time it is needed, necessitating further study. The solution is either additional data gathering, or mathematical modeling to predict the unknown data based on other measurements.

Risk assessment procedures are used, among other things, to set State or national standards for chemical pollutants released into the air or water, to write permits for facilities that discharge these same chemicals, and to determine clean up requirements at Superfund sites. Risk assessment is often the quantitative basis that EPA, or a State agency uses in deciding whether or not to grant an operating permit to a facility.

The great controversies over risk assessment, as a tool, center on the assumptions used in the process, and the use to which the risk assessment is applied. Both concerns focus primarily on how the risk assessment is used. In the first case, the assumptions often set the limits on what part of the population is protected or most effectively protected. Assumptions of body size, age sex, health will automatically exclude those people who differ appreciably from the assumption. Some of these concerns can be addressed by accounting for the differences, and not narrowing the assumptions used in the assessment.

The greater problem arises when the use of the risk assessment itself is questioned. Common examples are the siting of facilities that generate or use toxic chemicals, especially carcinogens. In Virginia, the controversy over siting medical waste incinerators and landfills is just such a problem. Even if the emissions and releases from these facilities are expected to cause only a one in a million health risk to the population, and the best pollution control equipment is used, the local residents usually still protest. The residents' rationale is simple and quite understandable—they object to increased exposures to toxic chemicals (e.g., dioxin) that increase cancer risk or impair their children's normal development (as does lead).

Skepticism concerning risk assessment is warranted, especially when risk assessment is applied more broadly across less predictable populations, conditions and chemicals. Risk assessment procedures are not capable of accounting for multiple effects, simultaneous exposure to many chemicals, or for existing doses of chemicals that we all carry in our bodies already. Nor can risk assessment deal with effects on wildlife, fish or worms, crabs and clams; the ecosystem remains an unknown for the risk assessor.

The greatest concern that most environmental organizations have with risk assessment is the application to policy issues. This concern is justified by the very nature of risk assessment; risk assessment is meant to deal with numbers, statistics and equations. Policy questions, on the other hand, require the translation of human values into laws and regulations. Risk assessment cannot and should not be used to avoid the difficult decisions; nor is a quantitative mathematical procedure a surrogate for judgment. Risk assessments, and science in general, is not value free and blind to the inputs or outcomes.

Risk assessment can best quantify the risks of harm from discrete and measurable events under known conditions over a period of time that is coincident with the target(s). In other words, risk assessment works best when there are few, if any assumptions, and all the conditions can be quantified with some high degree of accuracy.

The general cases under which these conditions are met involve retrospective analyses of events regarding single chemicals, on which there is substantial scientific information. The scientific information includes the experimental data on animal tests and on human exposures and responses. When the case involves only one chemical, and the risk assessor has all the information about the chemical and the target organism, and the risk assessor also knows that there are no additional unknown factors or conditions, then the results have a high confidence.

EPA has developed risk assessment procedures most effectively for the protection of human health, and more specifically for carcinogens. This greater development of risk assessment procedures for human carcinogens resulted from policy decisions, political pressures, and scientific justification, among other reasons. However, we will not elaborate further on this point, as it is really beyond the scope of this testimony.

Let us not forget that risk assessments are supposed to protect the public and the environment from harm, including death. We all have some intuitive sense that certain actions and substances are harmful unless some measures are taken to control the substance or action. Risk assessment is but one procedure used to prevent harm. The object is not an exercise in coming close to protection, the objective is to achieve protection. When there is a great deal of information on the subject, and little is unknown on the subject, then the decision on how to control so as to protect from harm is made with a great deal of certainty. But, when there is more than a small amount of missing information, then the level of uncertainty is higher and the control measures, by necessity must take that into account. A risk assessment must therefore, buffer the bounds of what is known with the realm of the unknown. This uncertainty buffer is small in the case of well studied risks.

A risk assessment can be likened to catching an airplane—the object is to get there before the plane leaves, not within 5 or 10 minutes of departure time. The trip to the airport is planned according to knowledge of the route, the conditions, the method of transportation, etc. And in the case of uncertainty, a traveller who wishes to be certain of, catching the plane will provide a buffer of some number of minutes. The risk assessor must also provide a buffer to be certain of providing protection, not nearly providing protection.

The risk assessment process requires prior knowledge of, or perhaps only reasonable knowledge of the likely adverse effects or outcomes from the event or activity. When practiced by emergency management personnel during a hurricane, the suite of consequences is known from the historical records of what has happened without any management decision to mitigate. Similarly, the effects from other activities are well known where we have started mitigating effects considered unacceptable—auto and occupational safety. In these cases, the risk assessment is actually an after-the-fact analysis based on observations of real events. These events could be examined and measured, even if less than perfectly.

As practiced all too often, risk assessment is only the determination of the lifetime risk of cancer from exposure to a chemical at some site or in an industrial release. In these cases, risk assessment misses all the other health effects and all the animals that are not human, and may not protect all the humans.

One of the greatest dangers in risk assessment is applying the assumptions and procedures to situations and cases that are not comparable. This problem has already arisen in the case of recently proposed guidelines for preparing risk assessments for neurotoxins.

A recent EPA draft of neurotoxicity risk assessment guidelines listed six assumptions from traditional risk assessment as a foundation for neurotoxicity risk assessment. In fact, the science of neurobiology, even as reviewed in the document, fails to support these assumptions as appropriate for neurotoxicity. This serves as an example of the dangers in defining a single method to identify and assess hazards, since the biology of risk varies enormously.

Assumption 1: threshold doses can be assumed.—There is nothing intrinsic to the mechanisms of neurotoxicity which could support such an assumption. More often, thresholds are observed due to the technological limits of the experiment. For example, we cannot measure the rate of cell death within the brain, only symptoms such as unsteady gait. Because of the brains incredible plasticity, such symptoms are indicators of massive damage, not early warning signals. At the same time, neuron cell deaths are permanent. The ability of brain cells to cover for each other up to a point, like players on a soccer team shifting positions, combined with technical limitations, masks slow or low dose effects so that experiments yield dose/response curves with artificial thresholds. It may be the case that for regulatory purposes there is a practical threshold because low level effects are not of concern. The decision about concern is a social judgment, made within political and technological parameters which are constantly shifting. Therefore, thresholds cannot be assumed as part of the science methodology for evaluating risk.

Assumption 2: NOAEL/LOAEL and uncertainty factors will give a satisfactory regulatory level, the RfD.—The first problem in this assumption is with the fact that a NOAEL is really a threshold concept and so is prey to the fallacy addressed above: that the adverse effect of concern would have been observed if it had occurred. The second set of problems center on the difficulty of extrapolating. The "uncertainty" factors as they are now used, including the LOAEL to NOAEL extrapolation, are based in statistics, not biology. In fact, they do not reflect "uncertainty" in the scientific sense of confidence boundaries on the measurements, but the uncertainty of figuring out how much more vulnerable humans might be. They are shot-in-the-dark extrapolation factors. Extrapolation from LOAEL to NOAEL should be replaced by an elevated risk calculation. The relative sensitivity between species can change dramatically from one organ system to the next, and brains are least likely to be similar due both to increased complexity and radical structural differences. Yet the "uncertainty" factor only accounts for differential rates of metabolism on the whole animal level. Similarly, population distribution of sensitivity can vary, and the "uncertainty" factor assumes a normal distribution, when sensitivity could perhaps be bimodal.

Assumption 3: variation in response is not due to population heterogeneity.—In fact there are many sources of variability that cannot be eliminated. Most obvious is genetic variability, but age, nutrition, concurrent disease and use of psychoactive drugs can all contribute. Attempting to eliminate variability in the animal studies for a drug may underestimate risk in humans by failing to adequately model the population distribution of sensitivities, as discussed above.

Assumption 4: average or total dose is a reasonable measure of exposure when dose/response is proportional.—Dosing schedule and size can make a significant difference in the effect of the chemical on the nervous system. Many neurobiological phenomena are episodic, like the release of neurotransmitters, action potential propagation and axonal transport. In addition, the substrates of neurotoxicity change over time, and doses delivered to the developing brain will have very different effects from those the same chemical exerts on an adult brain. Thus dose rate and size are important variables to keep track of in the assessment of neurotoxic risk.

Assumption 5: structure-activity is predictive.—Structure-activity is the ability to predict a chemical's biologic effects based on its chemical structural similarity to other chemicals. Structure-activity has failed in neurobiology despite enormous economic incentive and many attempts to use detailed knowledge about the action of morphine and the opiate/endorphin receptors, to design new pain killers.

Assumption 6: toxic mechanisms are the same for all doses and species.—In general, as doses increase, neurotoxins lose their specificity and other molecules or processes become affected. As noted above, chemicals may have varied effects between species due to differences such as in the brain structures, the abundance and properties of enzymes, and in receptor structures and distribution. Some neurotoxins are not blunt poisons but have very specific effects at lower doses, interfering with a particular molecule or pathway, which are often but not necessarily, the same between species. Thus extrapolations from animals to humans must be done from as informed a background as possible.

Risk assessments for human health effects use some measure of the known effects on humans, examined through accidental, occupational or other exposures. These data form the basis of epidemiological information on the toxic chemical of interest—highly valued in a risk assessment. In truth, however, we should not want good epidemiology, because that means the human health problem exists and we need to backtrack and cleanup. Thus, there must be solid and complex ways to evaluate toxicity in the lab. Using in vitro cultures of human cells, where biochemical changes are considered potentially adverse is an avenue we should be exploring. Toxicity hazard identification is so young a science it would be foolish now to set strict single rules about what to do with information we are still learning how to get. Flexibility to improve is crucial now, as the field expands.

Risk assessment procedures are not well developed for several topics outside the field of human carcinogenesis in cases of exposures to single chemicals from individual sources. The several topic areas where substantial work is needed to develop procedures, test assumptions and refine models include multiple exposure scenarios, hazards to non-average humans, and the entire realm of non-human endpoints—ecological risk assessment.

The lack of information and knowledge of performing risk assessments for chemical mixtures and multiple avenues of exposure is worrisome because these situations predominate in the real world of risks. None of us is exposed to but one chemical at time, nor from only one source. The U.S. population is exposed to an array of carcinogens, neurotoxins, mutagens and reproductive toxins. Each of us carries a body burden of dioxin, PCB's, lead, mercury and other chemicals to which we have been exposed over many years. Some of these chemicals remain in our body tissues for years, if not decades, and can be released and exert toxic effects long after taken up. Furthermore, we have little information on whether there are additive effects, multiplicative effects, offsetting effects, or other interactions.

Nor is EPA well prepared to conduct risk assessments for non-average subgroups or populations that differ substantially in physiology or health. Into this classification fall African-Americans and Native Americans, people with chronic health conditions, young children, pregnant women, and people whose weight differs greatly from average. EPA can incorporate more effective risk assessment practices for some of these people and groups with existing procedures. But that incorporation will demand policy changes and political will.

In spite of a wealth of data on environmental releases of chemicals and the status of natural resources, we have a remarkably poor grasp of ecological risk assessment. With more than due respect to our scientific colleagues who have struggled and continue to struggle to conduct ecological risk assessments, this area is woefully neglected in Washington. By ecological risk assessment, we mean the determination of risks to non-human endpoints, including, but in no way limited to: mammals, birds, reptiles, amphibians, fish, insects, snakes, trees, plants, crabs, dams, worms (of countless taxonomic units), shrimp, jellyfish, the diversity and integrity of habitats and ecosystems and other features of the natural world of which we are a small, but.highly influential part.

The Great Lakes Water Quality Initiative was, and is, and exemplary effort on the part of EPA to make much needed improvements in the water quality of a system. Yet, the EPA database on effects of toxic chemicals on aquatic animals and associated wildlife included comprehensive data for only a few species. The SAB concluded that while the species chosen may, in fact, be the best species on which to base standards, EPA did not have sufficient data to preclude the possibility that other species were equally as valid choices.

There is no reason to believe that legislation is needed or even appropriate to improve risk assessment at EPA. EPA already has the enabling legislation to permit the Agency to conduct high quality risk assessments throughout all programs and offices. Furthermore, the Science Advisory Board of EPA and the National Academy of Sciences, as well as other bodies and organizations, including EDF, have noted the importance and, role of high quality risk assessment. Having taken the recommendations of at least some of the comments of these bodies, EPA staff and managers have completed some high quality risk assessments. We see no need for legislation to improve the risk assessment practices and processes at EPA.

We believe that legislative action to mandate risk assessments, to dictate the nature and type of risk assessment or otherwise set requirements on EPA will impair the Agency's performance. We need only cite the current risk assessment of dioxin and dioxin-like compounds as evidence of what could go wrong with the correct process.

Lessons from Dioxin.—EPA is struggling in its attempt to complete the current dioxin risk assessment, after 2½ years and the expenditure of countless hours of staff time. The tragedy and success of this risk assessment is that it will be more than 18 months later than anticipated at its outset, and it will likely be the most comprehensive and complete risk assessment ever performed. In fact, this is the third attempt to characterize dioxin risks in more than a decade, and EPA certainly should be able to get it right.

The tragedy of this risk assessment is that it was initiated by the EPA administrator under pressure from the regulated community. Under the mistaken belief that some "safe" level existed for the chemical dioxin, EPA announced that perhaps dioxin was not as toxic as once believed, and they set out to find the threshold below which no effects were observed. EPA soon discovered that this assumption of a threshold was entirely unfounded and there was no evidence to support such a claim. Furthermore, upon initiating the "dioxin reassessment", EPA realized that an entire class of compounds had to be included in this effort, that cancer was by no means the only health problem, and that the U.S. population is already exposed to extraordinarily high levels of dioxin-like compounds. What was begun as a 1-year effort is still not complete after 2½ years, and countless hours of effort.

The success story is that EPA's risk assessment of 10 years ago has proven to be more protective than even they originally believed. Dioxin exerts powerful toxic effects on the unborn fetus, suppresses the immune system and disrupts endocrine function. The lifetime cancer threat may in fact pale in comparison with the threat to human reproductive systems at extremely low exposure levels. But, the population is already carrying a body burden that may have effects on the human population. With so much new information in the hands of EPA, it has become clear that the only sensible policy choice is to treat dioxin-like compounds in the same fashion as lead and eliminate all possible sources.

The current fascination with risk assessment and the rush to incorporate risk assessment into every decision made in the environmental arena (whether an EPA decision or not) seem based more in wishful thinking than in fact. There is a misconception that any phenomenon or activity can be measured and quantified with some high degree of certainty. Furthermore, numerical descriptions are somehow interpreted as "scientific" in nature, and are therefore given more credence and greater weight. Hence our ability to measure is transformed into a belief that we have improved our decisionmaking, without taking into account the importance of what we do not know about the topic or problem. Such is the case with risk assessment.

Risk assessment is not, however the answer to all the environmental ills and problems. Risk assessment cannot answer all questions nor replace sound judgment. Nor can risk assessment be used to make value judgments that are required of priority setting in the policy arena. In order for EPA to use the tool of risk assessment wisely, the process cannot be constrained by excessive requirements and expectations. EPA must be allowed to use risk assessment as best the Agency can—no more and certainly no less.

Mr. SWIFT, Our last witness is Mr. Jim Wilson. I am happy to recognize you.

STATEMENT OF JAMES D. WILSON

Mr. WILSON. Thank you very much, Mr. Chairman, and good morning. I am Jim Wilson. I am employed by the Monsanto Company and if I represent anyone other than myself this morning, I suppose it is Monsanto.

I am a scientist. I was trained at the University of Washington. My Ph.D. is in chemistry. I would like to offer you views of the scientist who has learned risk assessment by doing and not one trained in the art as we are now training people to do.

I have submitted some written testimony. You can make what use of it as might be useful to you. What I would like to do with this time this morning is comment upon a question that you asked, Mr. Chairman, and one that was asked by your colleague, Mr. Oxley.

You asked to what degree can policymakers rely on the advice of scientists in questions that concern the assessments of risks to health and the environment, and Mr. Oxley asked, to what extent is the process biased and if so who ordered it or who instructed the risk assessors to use a biased process.

Before we can begin to understand how we can use science, we need to know what are the limits of the science and what lies outside those limits. That is something that other speakers have mentioned.

Dr. Gough pointed out that risk assessment is not a science and he is certainly correct. I go a lot further than Michael did in saying it is not a science. It is not only not a science. It is not anything like a science.

Scientists make predictions about what is in the real world so they can be tested, as Dr. deFur said. Risk assessors make predictions about what might happen as a consequence of decisions that risk managers might want to make. I mean we all know—we all do risk assessment every day, it is not a complicated process.

You decide if you want to cross Independence Avenue without going through the tunnel or whether or not you can get across the street before the bus coming along will run over you. We may not be as good at those decisions as we like to think we are, but that is a risk assessment, it doesn't require a highly sophisticated technology to do risk assessment.

It is something we all have programmed in our genes to learn how to do. And those of us who don't learn how to do that by puberty typically won't survive to adulthood. What risk assessment is, is advice to policy makers. It is a way to make reasonably reliable predictions about the consequences of the decisions you are going to make.

In that sense, it is always a comparative act because there is always an alternative decision even of the decision of making nothing. My written testimony emphasized the evolution of the current EPA procedures, not only EPA, but generally government regulatory agency procedures, for doing risk assessment or health risk assessment of chemicals particularly.

From an earlier practice developed by the Food and Drug Administration for setting food additive tolerances—and this gets at the answer to Mr. Oxley's question, obviously this process has to be biased from its origin. If it were not biased toward providing food additive tolerances that were protective of the public, Congress would long ago have changed not only the people in the regulatory Agency, but the laws under which they operate.

It was developed to be biased. It was developed to provide not an assessment of the risk from eating the food additives that were put in food, but for providing a standard against which the legality of that additive could be judged.

The tolerance is a legal tool. It is a policy tool, for identifying whether or not an additive is appropriately used. Long, long ago, before most of us here were adults, the authority to make some of those policy decisions or some aspects of those policy decisions were tacitly and implicitly ceded to the technical staff in the Food and Drug Administration.

I suggest that at the time that was done, that it was not improper. It was a different time. It was a different place. It was a narrower focus, it was a narrower kind of question that was asked.

The people who were involved were the same kind of people who were making all the decisions in the country and were recognized as making all the decisions in the country and it was natural for the President and the Secretary of Health or whatever he was called at that time, the Commissioner, to trust the technical leadership in the Food and Drug Administration to make the kind of decisions about how to set tolerances that are in fact policy decisions.

What I suggest to you is that in the intervening 40 years there has been a significant change in the attitudes of the U.S. public, that this kind of authority that was granted to the technical staff at that time is something that is no longer acceptable. Furthermore, I would suggest that the confines of the kind of decisions needed to make food additive decisions, food additive tolerance decisions, are much broader now than the kinds of decisions that Mayor Lashutka referred to, are not technically the same kinds of decisions now that were required then.

So we need to reconsider how it is that some of these important policy decisions are made and why they are made. I suggest that they are retained by the technical people in the agencies because of historical reasons. Things have always been done this way.

I suggest that having them explain to policymakers and to the public, explaining the alternatives, explaining the assumptions that are made and what are the consequences of those assumptions, will go a long way toward finding an appropriate balance between exercising the technical judgment that is required and that is the reason that we employ scientists and public health professionals to advise the regulatory agencies and the Congress on these matters, and the policy decisions.

Now let me close with just a small example of the kind of thing that can go wrong and illustrate how these decisions are made. I would like to talk about formaldehyde, which is a rather nasty substance that is also something all of us make and destroy continually. It is a natural product of the body.

It is something that is found in wood smoke. It gives it that acrid odor. It is in cigarette smoke. It forms from combustion all the time. It is around us at small levels, but at very high levels, more than 10 parts per million in the air.

We literally can't tolerate to be in it. And at those kinds of levels it causes tumors in the respiratory tract in rats. At one part per million in the air, there are people who are sensitive to it at that level, it will cause asthma attacks in people who are sensitive and it is slightly irritating to the rest of us.

At a 10th of a part per million, there seems to be no effect. About 10 years ago when it was discovered that exposure to high concentrations causes tumors in rats, the Environmental Protection Agency did a quick and dirty standard risk assessment and provided an estimate of the risk, as they called it, at what are essentially background levels.

Subsequent to that, there has been a lot of research from both the academic community and the industry and in the national institutes on the mechanism by which this acts and as a consequence that research we understand much better the process by which formaldehyde causes damage in people.

In both the Occupational Safety and Health Administration and the Toxic Substances Branch of EPA, scientists who had to regulate this, who had to wrestle with the problem of regulating a ubiquitous substance, started to analyze this research and came to the conclusion basically that the background levels that were regulatable by EPA were probably safe enough, there was a large enough margin of safety that further regulation under section 6 was not required, that they persuaded the fiberboard and plywood industry, for instance, to make some changes in the way fiberboard and so on were manufactured so that the out gassing from those products was reduced and thus reduced the level inside confined spaces.

OSHA went through the process of lowering the permissible exposure level to a point where the current proposal, I am not sure where it stands formally, but the proposal that has been accepted by industry and by the unions is at a level that will protect against irritation, against asthma, and in the judgment of the Agency is sufficient to protect against cancer.

Those levels are between a 10th—the OSHA level is between a 10th and one part per million. The levels that EPA considers safe for general population exposure is about a hundredth of a part per million. But a couple of years ago, the Air Office in EPA was doing an estimate of the damage to health caused by air toxins, in particular the carcinogens, of which formaldehyde was one.

They used the old estimate from 10 years ago, derived by these conventional methods, developed out of the Food and Drug Administration methodology, and concluded that something like perhaps as many as 2,300 people a year would die from it. But that is 2,300 people who are projected to die and were exposed at the same level that the toxic substances administration considers safe, toxic substances office considers safe for background exposure.

Obviously something is wrong here. Obviously that doesn't communicate very clearly to the public what it is that we know about formaldehyde exposure or it doesn't give a very good picture to the public and to Congress about the process used for this risk analysis.

What I suggest to you is that that is because there was not communication and adequate amount of communication between the analysts in the office of research and development or in the office— in the Toxic Substances Office, to the management of the Agency about the differences between these two analyses, why in the more recent analysis the toxic substances people had concluded that the protective mechanisms that exist in the airway were sufficient to make the risk acceptably small at what are effectively background levels of exposure to formaldehyde.

So on that basis, what I conclude is that this bill on risk communication that we have referred to several times would go a long way toward helping us to understand both what are the limits of the science that goes into risk assessment and the limits on the projections from that science that are the advice to policymakers, and how these can best be used in the policymaking process.

Thank you.

[The prepared statement of Mr. Wilson follows:]

STATEMENT OF JAMES D. WILSON

My name is James D. Wilson. I am employed by the Monsanto Company in St. Louis, Missouri. Monsanto is a diversified manufacturer of high-technology chemicals, pharmaceuticals, fibers, and plastics. I have been involved in evaluating the safety of industrial processes and products at Monsanto for more than 20 years. A chemist by training (Ph.D., University of Washington, 1966), I now specialize in science policy issues concerning risk analysis. I appreciate this opportunity to present my views on problems with health risk assessment as regulatory agencies practice it.

I currently serve as President of the Society for Risk Analysis. This professional and technical society has some 2100 members spread around this Earth, from government, academia, and the consulting and manufacturing industries. It includes the intellectual leaders of this young discipline. The thoughts and sentiments I express here should not be taken to represent those of the Society's members; SRA is too diverse for any single person adequately to represent its members.

There are numerous technical problems with health risk assessment, most of which are being resolved by the normal process of learning and growth within this young profession. Yet among these are some substantial problems that only Congress can resolve. H.R. 2910, the Risk Communication Act introduced by Messrs. Brown, Moorhead and their colleagues, addresses some of the most serious of these. I suggest that solving this structural problem is very much in the interest of all the people of the United States, and urge that this Bill be given very serious consideration.

The problem concerns a tacit delegation of policy-making authority to technical staff in the regulatory agencies, particularly in EPA. Career technical staff have the authority to make significant policy decisions involving regulation of human health and environmental risks. They have not been explicitly granted this authority, and in fact most people do not even recognize that this has occurred: the authority is embedded in the culture of regulatory risk assessment. Exercising this authority leads to information being withheld from policy makers and the public, and thus to our being unable to judge whether decisions based on Agency risk assessments bring us the environmental benefits we expect.

Below I give some examples of situations where failure to provide key information to policy makers has significant consequences for environmental protection. I suggest that these are representative of many others, and that the result of this problem with the risk assessment process provides the people of the United States with less environmental protection than we deserve for the resources we devote to achieving it.

Note that this assertion should not be taken as an indictment of the people in the agencies. They are good people, and from everything I know their intent is always to benefit the public. Adverse consequences can flow from their exercise of this implicit authority because they are not in position to obtain all the information needed to balance the increasingly complex risks to health and the environment posed by many regulatory decisions. By their training and interest they tend to be specialists—and in fact it is their specialized knowledge and experience that makes them valuable to all of us. Yet it is well known that this specialization prevents their developing sensitivity to important considerations, e.g., the special needs of minorities. So they must provide those charged with ultimate policy decisions with the knowledge needed to make them.

To repeat: the suppression of information is a consequence of the culture of regulatory health risk assessment that has developed over the last four decades. The need for change is widely recognized in the agencies. In fact, many of the precepts given voice in H.R. 2910 have been expressed by leaders of the professional staff in EPA and FDA, in the context of seminars and symposia on that part of the risk assessment process we have come to call “risk characterization”.

Delegation of decision authority is a consequence of the early development of health risk assessment practices in FDA.—A bit of history: What we now call health risk analysis began as a means to help FDA control food additives under the mandate assigned it by the food and drug amendments of 1938. In the years after World War II, FDA was deluged with applications for approval of new food additives, many of which promised significant benefits in food preservation, flavor enhancement, and processing. Unfortunately, little was known about the hazards these new chemicals might pose in food. So FDA scientists developed a new methodology to infer enough about those hazards to allow reasonably efficient regulatory decisions. Under the leadership of FDA’s Arnold Lehman, a small group of scientists from government, industry, and academia, in this country and in Europe, developed the methods of setting food additive tolerances based on results of animal tests. By the mid-1950’s, this development was essentially complete. It remains the basis for the risk assessment practices used today by FDA, by EPA, and by all the other Federal and State regulatory agencies.

Two characteristics of this methodology deserve mention. First, it is intended not to estimate risk, but to identify an exposure level that is “safe”. Recall that the food additive standard requires “reasonable certainty of no harm under expected conditions of use”. The developers of this methodology recognized that “no harm”, literally interpreted, cannot be proved. In the real world, any projection below what is measurable contains some proportion of fantasy. There is no means to check the extrapolation. These eminently practical men thus settled for tolerances that were “reasonably certain” to produce no discernible harm, including a substantial margin for error. Achieving this soon developed almost into a formula for most cases presented to them: the lowest “no effect” level from the animal studies is divided by a 100-fold “safety factor”.

The second notable characteristic appears contradictory: Dr. Lehman and his associates freely deviated from this formula whenever other data were available, particularly if such data were obtained from human exposures. They possessed both the knowledge and confidence expected to be found in experienced professionals, and took no risks in breaking their own rules. This latter circumstance no longer applies, not in FDA and particularly in EPA. The deluge faced by FDA in the early 1950’s seems like a trickle when compared to the workload faced by EPA’s technical staff in the latter half of the 1970’s. EPA’s natural response was to simplify its process as much as possible, so that the work could be done by its young staff. In doing this, the flexible rules of thumb of experienced professionals became hard-and-fast prescriptions. Deviating from them almost required, to borrow an old cliche, an Act of Congress. (In fact, what EPA commonly requires for significant deviations is a very clear signal from the scientific community that a consensus exists to support this decision.)[1]

In the context of setting food additive tolerances, it is easily recognized that some of the decisions made by the technical staff constitute policy decisions (albeit decisions informed by expert judgment). The study chosen as the basis for the standard is a policy choice. So is the choice of the "safety factor" used to derive the tolerance from the "no effect" level. So would be a choice not to base a regulatory decision on available human data, or not to use some means to merge data from several data sets. In the evolution of this methodology in the FDA of the Truman and Eisenhower administrations, authority to such decisions was implicitly ceded to the technical staff. At that time the Secretaries of Health, the Commissioners of FDA, and Dr. Lehman and his peers were all men with very similar backgrounds: biochemists and physicians educated in the leading American universities. American society placed great trust in these people to act in our collective interests. It was quite natural for the FDA scientists to be allowed to choose how to evaluate the data and essentially to set the enforceable standard, the food additive tolerance.

I need not tell you that conditions have changed. What was acceptable to the public when General Eisenhower occupied the White House is not acceptable today. To illustrate this point: Congressman Waxman was recently quoted as saying that Congress could not afford to let up on its oversight of EPA just because a Democrat occupies the Administrator's office. I agree.

When EPA was formed, the risk assessment culture developed in FDA was transplanted to this new Agency, from where it diffused to the other Federal agencies, and to many of the States. To its credit, EPA has realized that it cannot operate in the same way that FDA did 40 years ago. Encouraged by the 1983 National Academy of Sciences study on risk assessment, it has tried to improve the separation of "risk assessment" from "risk management". It has taken several steps intended to open up its decisionmaking processes, including describing the risk assessment process in a series of Guidelines, use of its Science Advisory Board for public input, and, more recently, adopted guidance on "risk characterization". All of these point in the right direction, but they do not go far enough. The fundamental problem I perceive is now so deeply embedded in EPA's and other agencies' cultures that it cannot be changed from within. For it to be corrected, the agencies need to understand that it is the will of Congress.

Failure to communicate important information provides less environmental protection at higher cost.—Although the intentions of the technical staff who wield this hidden policy making authority are probably only the best, our failure to adapt a system focused on a narrow objective in limited circumstances to the broader objectives and changed circumstances that reign today results in our having less environmental protection than the public wants. Further, the protection we do enjoy comes at a much higher cost than is necessary. The examples that follow are just that—examples chosen from among many such instances point out different ways for the inadequate practice to lead to unfortunate results.

Not all untested chemicals are safe. My first example illustrates the mistake that is probably the most common of all incorrect assumptions made by EPA staff: that untested chemicals are safe. The present system is biased against knowledge, in that restrictions are commonly placed on substances about whose hazards we know something, while similar substances about which we know little are unfettered. Yet ignorance does not equal safety. Several provisions of the Toxics Substances Control Act are there specifically to ensure that knowledge would be developed. Yet use of the descendent of FDA's methodology, applied in the context of other TSCA provisions, inhibits acquisition of such knowledge.

Recall that our risk assessment paradigm evolved as a tool for enforcement of a law that permits nothing that is not specifically approved; in this circumstance, there exists a very strong incentive for anyone petitioning for approval to produce data that bear on the safety of the product. And so the methodology assumes that data will be available for everything, and furthermore that data will take a certain form. In contrast, under TSCA everything is permitted that is not specifically restricted. EPA can force manufacturers to provide data on products in commerce before 1977, but the mechanism for doing so is exceedingly clumsy and expensive (to both EPA and the private sector). So, although the thousand or so most common industrial chemicals have been extensively tested, there is relatively little information available on the remainder of the 30,000 or so non-polymer compounds on the TSCA Inventory.

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[1] Reliance on this prescriptive methodology also inhibited EPA from developing expertise in epidemiology, which it must have to understand the human data now commonly available on most high-stakes substances.

The SARA "toxics" list provides an example of consequences following from this assumption. Most formulators of products such as adhesives, inks, etc. prefer to rely on substances not on the section 313 list rather than any that do appear on that list. The substances on that list and those proposed to be added are, by and large, chemicals about which much is known. Since chemicals not appearing on it are presumed to be safe, this list is biased against knowledge, with the result that the public is exposed to chemicals that could be dangerous.

In one such case, two chemicals now used in the United States can effectively supply the "stickiness" needed in pressure-sensitive adhesives such as are used in press-apply labels and the like. One, named "butyl benzyl phthalate", has been extensively tested by its manufacturer and the National Toxicology Program. Because it is manufactured in the State of New Jersey, it was put on the "New Jersey List" and thus onto the SARA section 313 list. The other, named "dipropyleneglycol dibenzoate" has much less test data available; because it is manufactured in Tennessee, it did not automatically go on the SARA list. Because much less is known about its toxicologic properties, it has not been proposed as a candidate for listing. So adhesive formulators use this "dibenzoate" chemical instead of the "butyl benzyl" chemical for adhesives, exposing millions of people to a chemical whose hazardous properties are not thoroughly understood.

Again, this failure occurs because a system developed for one purpose has been unthinkingly used for a different purpose, one in which it does not give the result expected for it—and because that fact is not communicated to EPA leadership by the technical staff who should understand it.

Standards used for environmental regulation conceal much relevant information. EPA employs numerical standards to identify cleanup levels under Superfund, to regulate a number of activities under RCRA, and to set standards for surface waters under the Clean Water Act. These numbers, commonly collectively referred to as "Reference Dose" (RfD)[2] numbers, are derived by a group in EPA's Office of Research and Development, with no input from the public. The only review these receive is from colleagues within the Agency; there is no public peer review by non-Agency scientists. The RfD numbers are entered into the Agency's computer system called "IRIS", from where they become used as regulatory tools. Recently a new standard for a subclass of PCB's was proposed; this subclass was released to the environment and human exposure may occur as a result. As it does in most cases, EPA used the old FDA methodology: they chose the results from one animal test as the basis for the standard, selected a "dose level" from this test, and then chose the number by which this dose level would be divided to arrive at the "Reference Dose".

There are two problems with this. First, this subclass of PCB's is one that had very widespread human exposure during manufacture of electrical equipment before PCB's were banned in 1979. We know a lot about the toxicity of these PCB's to people. Everyone agrees that the knowledge about how people respond to a toxin is the most important information available in setting an exposure standard. Yet the old culture says that these standards come from data on animals.

Second, the test chosen as a basis was not the only one available, as the FDA methodology implicitly assumes. I had a quick literature review done, and identified nineteen studies on this and a closely-related PCB subclass that provide relevant information for the purpose at hand. I understand that the one chosen was not the most reliable of these nineteen studies. In a scientifically acceptable practice, all of the available data would have been used, not just the one test result.

The spread of numbers that may result from these and other decisions made by analysts is very great: the highest value in this particular case is about a thousand times larger than the smallest. I submit that this difference may be very material to any subsequent regulatory decisions.

Here we see that a procedure designed to cope with ignorance has fossilized into one in which knowledge is ignored. At the very least risk managers and the public deserve to know this.

Standard methods inflate risk estimates.—A third example: formaldehyde. This ubiquitous constituent of all living things is, when the free form is inhaled, a carcinogen in rats and mice. Formed from combustion, it is present in sub-ppm level everywhere in the air; the levels are higher indoors, especially when any kind of smoke is present. The vapor is very irritating, and can induce asthma attacks. Both EPA and OSHA face the problem of setting exposure standards for formaldehyde, knowing that it might be capable of contributing to cancer under some circumstances. They need to decide if the cancer risk is substantial at levels where irritation is minimal—since the present standards are set so as to minimize irritation and asthma. EPA's Office of Research and Development made an initial evaluation of the rat cancer data using the standard "linear extrapolation" methods. Recently, EPA's Air Office published a study purporting to predict the number of cancer deaths from air pollutants, which relied on this initial, formulaic analysis. Using this "linear" extrapolation, EPA predicted that more than 2000 deaths would occur from formaldehyde exposure. However, at the same time scientists in EPA's Toxic Substances Office were reviewing the very large body of other information available on the key issue in formaldehyde risk assessment, the shape of what is called the "dose-response curve". These scientists are convinced that the initial analysis is not correct, a view shared by OSHA and by most of the scientific community outside the regulatory agencies. Although there is not yet consensus on the most appropriate shape for this curve, there is consensus the risk at the background exposure levels assumed by the Air Office is orders of magnitude less than the initial model suggests. I suggest that reliance on the initial analysis unnecessarily misled the public.

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[2] I include in this discussion the similar standards identified by EPA as "Reference Concentration", "Risk-specific Dose", and "Risk-specific Concentration". All of these serve the same purpose as the "Average Acceptable Daily Intake" standards developed independently by FDA. The "Concentration" standards refer to acceptable concentrations in air or water.

Two other messages may be taken home. First, the choice of dose-response can turn out to have a significant impact on policy decisions. This choice is customarily made by default, and no discussion of the impact of the choice occurs. Second, the existence of methodology set in concrete by decades of unquestioning use strongly inhibits the natural inclination of Agency scientists to seek out the best information available for risk assessment. I know that the best scientists in EPA and in FDA are very frustrated by the inability to break out of the constraints imposed by methodology not adapted to current conditions, a frustration that we in industry definitely share.

Exposure assumptions are often ridiculous. Finally, let me refer briefly to the policy choices made in evaluating exposure. I expect that everyone has heard of the exaggerations commonly included in environmental exposure assessments: the most exposed person lives at the point of maximum possible exposure, ingests dirt from the yard like a toddler with pica, sits on the front porch of the house, naked, while breathing at the rate of someone doing vigorous exercise, and eats with the appetite of a freshman linebacker on the University of Washington football team. Chaining together assumptions like these commonly exaggerates exposure estimates by one hundred to one thousand times. Thus the risks from Superfund sites and from air toxics is exaggerated by at least that much.

This situation is absurd, and its absurdity has brought notoriety. The technical and scientific community has agreed on a solution: exposure estimates need to be made using modern, computer-based statistical techniques. The results should be presented to risk managers in a visual form that makes clear both the range of possible exposures from a particular decision-scenario, and the likelihood that any particular exposure will occur. EPA's Policy Office is taking a leading role, with the Department of Energy and the Society for Risk Analysis, in working out some of the details on how best to do this, what are some of the technical potholes, and so on. This mode of presenting results exemplifies how the provisions of H.R. 2910 can and should be implemented.

In conclusion, some of the problems with health risk assessment in the Federal Government stem from a failure of analysts to communicate to risk managers the assumptions they make and the implications of those choices. This failure, in turn, commonly occurs because of a particular culture derived from conditions that existed 40 years ago. To correct the failure, the regulatory agencies need to understand that Congress requires them to make clear to the public what policy decisions are embedded in the technical analyses. Enacting H.R.2910 will send this message.

Thank you.

Mr. SWIFT. Thank you very much. Let me begin with the Mayor.

You bring up a point which we hear frequently and with which I have considerable sympathy about the fact that we overdirect a great deal of the time. But it is kind of human nature. I don't think I have ever talked to a service organization, service club, which hasn't had two things: One, someone wants to know when we are going to get government off their backs and then someone will point to some outrage and suggest government should do something about it. It is ultimately that one, none of us wants to take the risk of giving somebody else some freedom. If I delegate that to you, you might, by God, make a mistake. And that is that.

And then comes the oversight hearing. Who was the person that delegated that decision? Somehow in the oversight hearing that becomes misfeasance in office, if not nonfeasance and so forth and so on. It is a very difficult thing, I think, in a democratic society to do what you ask. I think government would be more efficient, probably less costly in a great many ways, if we could make that happen. It is a political problem for all of us public policymakers to know quite how to deal with the Monday morning quarterbacking that goes on when you delegate decisionmaking to other levels.

And if you do have a solution to that human problem, I would be happy to hear, but I suspect that you are as confused by that as I am. However, the question that grows out of that is, you have done, I think, a fairly gutsy thing. You basically set yourself up for all that second-guessing in trying to come up with what you feel is a more rational way of making those decisions in your own community.

I am wondering if you are planning to deal with the second-guessing, the Monday morning quarterbacking, where you plan to hide the first time it comes off the wall and decide you are 40 kinds of a bad guy for doing that.

Mr. LASHUTKA. I would like to bifurcate the response if I could.

I appreciate the quality of the question because my phone is listed in the Columbus telephone book, and the last I checked my phone, my wife or my children or even yours truly does get the phone call. It is not always about police protection or garbage. It does affect the very issue that Professor deFur talked about on the lead problem.

Let me give you a practical, hard choice we had to make. I tendered a budget that wrestles with a $34 million shortfall, 60 people less in City Hall won't be there. We will have to make harder choices next year, but we had to make some harder choices in the very problem that Mr. deFur talked about, and Ben Maiden may chat a little bit on the record, if you would like.

We agree there is a lead problem, and we have a little blip in our water supply and we have had a track record of no lead problems in Columbus, Ohio.

Our billing system for sewer and water is every 3 months. The rules, the one-size-fit-all, said if you don't put a notice out in 2 months, you are in violation of the EPA regulations. It costs about $48,000 to put that notice out, without merit. We resolved it and it went back to normalcy.

But we know we have a lead problem in Columbus, Ohio, in lead paint, in sort of the southern part of our city. It would have been just terrific to have $48,000 that we don't have for mailings to go out to certain households, to have our Environmental Health Unit work with the Development Department to help resolve that issue. We didn't. So we were forced because of the knowledge level on those, to follow what you said and what Bill Clinton is raising, that, yes, we are going to cover our butt and you will follow our rules, but that doesn't help me with my problem.

In fact, what it did was set us back one step—well intentioned, but set us back. So we can't run away from those problems at the local level. We are going to have to make some hard choices; you are right.

You are right; it is gutsy, some would say foolhardy. I trust the ability of the will of the people of Columbus when, objectively, given the facts, with the talent that comes from our universities and scientific community to make our choices, if I could, because the hardest burden will be to get good people to communicate objectively with the citizens.

If I could—Mr. Chairman, if Mr. Maiden would like to respond to that, I would appreciate it.

Mr. SWIFT. I would be happy to hear from him.

Mr. MAIDEN. Thank you, Mr. Chairman. Just a little bit different spin on this subject.

I believe that the Mayor and the City Council in the City of Columbus are doing a very progressive thing when we set up the institutional arrangements they have set up, including the Environmental Science Advisory Committee and also the Priorities 95 initiative that is underway, which includes an outreach program to various other stakeholders groups. Because in accordance with what we have heard today, risk assessment is science based, and there are a lot of improvements that need to be made there and there is a lot of scientific input that can improve decision processes.

But risk management decisions, at the end of the day, are value-laden decisions and political leaders at the local level, as well as the State and national level, have to have informed input on the values that their communities or their constituencies represent.

I personally believe that the Environmental Science Advisory Committee—which by the way is comprised of people that have reputations associated with the various dimensions of the problems—we have prominent engineers in the group, we have prominent ecologists and environmental scientists, public health specialists, toxicologists, epidemiologists, economists, the full array of expertise required to do these cost-risk benefits types of reviews.

Our objective, in large part, is to provide independent objective counsel, bipartisan to, the officials of the City of Columbus on issues that they face regarding major investments related to environmental compliance obligations and unfunded mandates.

In doing that, we will reach out to other members of the scientific community, as well, and to hark back to a point that Tom Grumbly made earlier, that I think is relevant here, to whom does risk assessment matter? We won't be doing risk assessments per se, but we will be reviewing those documents and providing independent, objective input; and I believe that there will be an enhancement of the information on which community political leadership will act, and I also think, quite honestly, that we will provide some cover, as well as some basic information, when it comes to the results of that work. And those of us participating in the process recognize an obligation to do that.

Mr. LASHUTKA. If I could.

Mr. SWIFT. Certainly, Mayor.

Mr. LASHUTKA. Rick, if I didn't mention this, would you talk to me later?

A number of us have questioned the process, how this round peg and square hole fit together. But the courage of the U.S. Environmental Protection Agency, through a generous grant of $24,000, helped us in this process, so they have really bought in through Region 5 that we are going in the right direction. So it has not been a Columbus-alone process. They heard us and they awarded a grant, for which I am appreciative.

Mr. SWIFT. I am very impressed. I think what we are seeing here are some elected officials who are willing, if you will, to take a little risk in order to get more rational policy. If you are unwilling to take the risk, then you can cover—you can play cover-your-behind all day long, you know, head for the roundhouse, Nellie, no one will ever corner you, corner you there. You can play that game, but it usually ends up with more lousy policy, more extensive policy.

You are sticking your neck out. Good for you. A couple of other questions; then I will turn it over to my colleague from Ohio.

One, just very briefly, Dr. deFur, you said that risk assessment was—if I heard you correctly, was not appropriate for policy decisions. Were you referring to kind of crossing that line that they had on the board?

Mr. DEFUR. Yes.

Mr. SWIFT. You shouldn't misuse a risk assessment by trying to justify what is a judgment call on the basis of it. But you are not suggesting that if you understand where that line is, you can't utilize a risk assessment in trying to arrive at the more subjective judgments; is that correct?

Mr. DEFUR. Exactly.

Mr. SWIFT. OK. I thought that was what you said, but I wasn't sure.

Finally, Dr. Wilson, there is disagreement within the scientific community over some of the underlying assumptions that govern the risk assessment process. We know that. Is it fair to say that when given the choice between several valid models that EPA generally favors the choice that is the most protective of human health; and do you have any problem—if that is true, do you have any problem with that? Should they be making that judgment some different way?

Mr. WILSON. Mr. Chairman, I am not sure that there is disagreement in the scientific community about the model. I think that there is a wide degree of opinion that none of the models is any more valid than any of the others. For the use to which they are being put, none of them can be tested. They are all based on a very limited amount of science.

I believe that there are—I can't give a simple answer to the last part of your question. There are circumstances where the choice that they make is the most conservative in the sense of estimating the risk to be largest at a particular exposure, and there are other circumstances where they could choose a large one.

They are quite consistent in using this particular approach. It doesn't always give the most—possibly the highest risk number, but it does most of the time.

Mr. SWIFT. I presume that the truth is that no matter what they did, it does not—there is no decision they could make that would prevent reasonable people, from time to time, from disagreeing with their decision.

Mr. WILSON. I think that is true.

But let me add one thing, please, if you would, sir; and that is, you recall that the methodology arose in order that it could set—that they could set protective standards—that is, protect essentially the entire population against things to which essentially the entire population is exposed. It has to be conservative. They have to use that kind of number.

I think what those of us who are particularly critical of that, don't suggest necessarily that this is an inappropriate choice, but that they don't make clear to the public how—why they are doing it and what the alternatives might be.

Mr. SWIFT. Transparency, as it has been referred to?

Mr. WILSON. Yes.

Mr. SWIFT. The gentleman from Ohio.

Mr. OXLEY. Thank you, Mr. Chairman, and we welcome the Mayor of Columbus, one of the fastest-growing communities, not just in Ohio, but in the country. The Columbus metropolitan area is now bigger than Cleveland and has been for the last several years, a fact that a lot of the people don't recognize, so it obviously has grown.

Mr. SWIFT. It certainly did.

Mr. OXLEY. We are pleased to have the Mayor and some of the experts he has brought with him, because I think in many ways—as you point out, Mr. Chairman—it does represent a sea change in local government and its ability to wrestle with some problems at the local level and it shows that they are competent to do that. You don't need Uncle Sam and the Congress and the Federal EPA looking over their shoulder second-guessing them.

So we think that this testimony is quite helpful in setting that stage.

Last month, the National League of Cities in their publication provided a set of principles for addressing the unfunded mandates program. I know that you have been very active in that effort, along with other local officials throughout the country.

One of these principles states, "The Federal, State and local governments should utilize a scientifically objective, unbiased assessment as a tool in determining environmental priorities." One of the reasons that we introduced our risk assessment bill was to address ourselves to that.

Do you think that the EPA and other agencies need to review their risk assessment procedures to ensure that they are objective and unbiased, so they provide a sound basis for priority-setting?

Mr. LASHUTKA. I believe the difficulty that occurs—and I think really a better response perhaps came from Dr. Graham, who indicated that in the different regions, because of lower or individual influence or however it developed, there is a difference of opinion creating some challenges for each of us operating in that environment.

And I think it would be extremely helpful—and I don't want to focus exclusively on the environmental side, because I think that might be inappropriate, but it is true in all mandates.

Let me suggest to you a practical issue and it wasn't done by Congress, but the Federal Register and our right to have the water rain on Columbus through the MPDS permit storm weather regulations, which have not been discussed today, but which are a major challenge and to have the rainfall in Columbus would cost a little over $75,000 in that permit. When the bill came in—and Rick can correct me if I am wrong—it was over $1.5 million to prepare our permit. Somehow, something is out of whack.

Now, well-intentioned people believe stormwater is a problem. We do in Columbus but when we have that kind of a disparity, Congressman Oxley, it is something that is hard to explain to our people, when their sewer bills go up. We didn't peg that number; somebody here in Washington did, and we have to live with it. Somehow, something is not working.

And we must reconcile that because when our constituency, which is a constituency that is in the City of Columbus, and we have your peers who represent our district and we elected a President, they are looking at the Governor, the President, Congress, and ourselves to make this thing work, it is not working and it is hard for them to understand.

Does that answer somewhat help you?

Mr. OXLEY. Yes. And to follow up on that I want to ask Mr. Maiden, do you think that the worst case or conservative risk assessment by Federal agencies is contributing to the unfunded mandates problem?

Mr. MAIDEN. In my judgment, Congressman Oxley, there is absolutely no doubt about that. I think one of the major policy issues that the committee must look at is the full disclosure provision which is a key element of the Risk Communications Act, as I understand it, and I tend to endorse the testimony of previous individuals, including Dr. Graham, who indicated that not only will the Nation save considerable money and have a better set of results for limited dollar investments, looking at the best-estimate case rather than the worst case. It is a win-win situation all around when it comes to that.

Now, that doesn't mean we don't have further progress to make, when it comes to the methodology; and as has been indicated by others, it doesn't mean that there is absolute consensus in the scientific community on that in any given case. But focusing on the central estimates of risk rather than on the worst case while disclosing the worst case, in my judgment, would substantially reduce the unfunded mandate problem and improve the performance of the results, the return on our investment.

Mr. OXLEY. Dr. Wilson, should risk managers insist on the best available information and the best estimates?

Mr. WILSON. Well——

Mr. OXLEY. Should they take the initiative in their role?

Mr. WILSON. I would certainly expect a risk manager who is a good manager will naturally know as much as she can or he can about the risk, about the estimates, about the uncertainties about the assumptions and about their impact on the recommendation made by the analyst.

Mr. OXLEY. I was referring to a plausible, reasonable estimate.

Mr. WILSON. Oh, yes, absolutely no question about it.

Mr. OXLEY. Has that been the case in the past or have they been more compliant than perhaps they needed to be?

Mr. WILSON. I think there has been some feeling within the Agency, certainly, that they are told as much as the analysts think they need to know. That is a tendency that is often combated, but I think that——

Mr. OXLEY. The mushroom theory?

Mr. WILSON. Yes, the mushroom theory.

Mr. OXLEY. Mayor, let me ask you about the Priorities 95 program where you have indicated you want to identify environmental priorities in the Columbus area and throughout central Ohio. What kind of goals are you trying to achieve and how are you developing the priorities and what role is the public having in this whole process?

Mr. LASHUTKA. Congressman Oxley, if I could again share, because I think it important to have perhaps Ben Maiden comment, and perhaps if Rick would like to—he has been silent—and we have been through five broad-based citizen committees really trying to look at the policies of data collection analysis.

We think bringing the public in to go through the education component is important, and the public outreach is clearly part of Priorities 95. To identify and analyze the risk reduction alternatives that are available given the dollar amounts that are there and how project management might be best pursued in our community are some of those issues that we believe are important. We don't think it is an easy process, but one that we do think is an icebreaker for our community, to not only educate the public as to cost and benefit, but do the enlightened approach that will help us get a better quality of life in our community.

Mr. HICKS. Congressman, if I could comment briefly on your question, you asked about the goals of the project, Priorities 95. Let me just touch on those briefly if I could.

First of all, the biggest goal we have is to improve environmental protection and public health protection in the City of Columbus and the surrounding areas, so that is number one.

But we also want to do a couple of other things in conjunction with that and those involve educating the participants of the project, as well as the public, about the concept of environmental risk, including the differences between perceived risk and actual risk, which I think are important for people to understand when they are dealing with this issue.

Another one of the goals that we have is to try and build some kind of additional trust between government interest and area citizens, which I think is important any time you are dealing with public policy, obviously.

The last goal that we have that I would point out is that we would hope to be able to use the results of this project to demonstrate to folks at the State and Federal level that we do have, as has been mentioned, the ability to make good public policy, to be relied upon to do that when and if we can. So those would be my comments on the goals.

And you also asked about the role of the public in this. I think my response there is that the public is going to play a central role in this process.

There have been statements earlier today alluding to the fact that you can't necessarily depend entirely on scientific individuals and risk assessment to create good policy, and we would certainly agree with that. There is a very vital role, in my estimation, for the public to become involved because ultimately you need the buy-in from the public and the trust of the public to make any policy work. And we want to use the public to play a central role in this process by helping to suggest what environmental problems we should study, to comment along the way, as the scientific results are becoming known and gathered about the extent of our problems, and to suggest appropriate solutions to the problems that we identify. We don't just want to rely totally on the scientific community or technically oriented individuals who do this.

The public also has to play a major role because they obviously have important opinions and values that have to be taken into account.

Mr. OXLEY. Could you explain to a lawyer the difference between "perceived risk" and "actual risk," and maybe use an example that might be appropriate?

Mr. HICKS. I think that if I could speak, as a lay person, which I am, to me the difference between perceived and actual risk might touch back on the point that was made earlier about the risk that might be communicated at the high end versus the middle number, the more realistic number when we are talking about any of these things.

Information is distributed periodically about, you know, the worst-case scenario; what often gets lost, though, is the more realistic information about what would probably happen if you do not use that worst-case scenario and that would be my distinction between the real versus perceived risk in some cases.

Mr. OXLEY. Finally, last question to the Mayor, and perhaps to the other gentlemen as well. Columbus is uniquely blessed by having Battelle and Ohio State University. While I give you a great deal of credit for doing this and pushing the envelope on this, Mayor, the fact is that most cities, particularly the size of Columbus and smaller, don't have that capability.

What would you say to your colleagues and your peers at that level as to how they should proceed?

Mr. LASHUTKA. Just as we did early on in the Federal mandates issue, which became a model that was again improved upon slightly, perhaps, and then taken across the country, I think that there could be a two-part effort: one, that through a number of existing institutions, that even though the Ohio State University is the largest land grant college in America, the largest campus in Columbus, there are campuses throughout all of Ohio and other distinguished universities in Ohio with other talents that can come to bear for cities and villages and townships who would like to pursue—and I think they are primarily driven by cities and villages, might I say.

There is a way to implement the same kind of focus not only in Ohio but probably throughout every State in the Union, and if we have the will to free up and do exactly what the chairman had indicated that, yes, hold us accountable, give us a chance to rank these through a methodology that does make sense, through a group that can come together at I don't think phenomenal cost, although my friend from Battelle, Ben Maiden, is a talented individual who has other competing interests.

I believe there can be a selfishness of people allowing this to work because the harsh reality is there were not enough Federal dollars when we came through this growth of the mandates to have the Federal Government throw enough money to make it work. We are in a different time period. We have to recognize we have limited resources.

I do think there is a way, not only in central Ohio, but throughout the entire State and probably the entire country to make this work with universities and scientific groups and others coming together with the right mix. We are blessed in Columbus and I appreciate it just as you do.

Mr. OXLEY. Thank you. I thank you all for an excellent panel.

Mr. SWIFT. I think this morning has been well spent. I think we have had three distinguished panels with different perspectives, and I think it has been extremely helpful for me.

We thank you very much for delaying your lunch so you could be of assistance to us.

The subcommittee will stand adjourned.

[Whereupon, at 1:25 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[The following letter was received for the record:]

AMERICAN INDUSTRIAL HEALTH COUNCIL,
November 24, 1993.

Hon. AL SWIFT,
Chairman, Subcommittee on Transportation and Hazardous Materials,
House of Representatives,
Washington, DC.

DEAR MR. SWIFT: This letter is intended to convey post-hearing testimony by the American Industrial Health Council (AIHC) on issues raised at a hearing held on November 17, 1993, regarding environmental risk assessment. Current regulatory practices for assessing risks to human health from environmental sources include serious deficiencies that we believe Congress needs to better understand.

Failure to use all the data.—Default assumptions are often used where specific data is available. For example, the Linearized Multistage Model is often used where data on biological mechanisms indicates it doesn't fit.

Failure to fill critical data gaps.—Critical data gaps which are major causes of uncertainty in a risk assessment often could be filled by further investigations. Instead, due to time and resource pressure, they are often left unfilled and are addressed through the use of worst case assumptions.

Embedded management decisions.—Risk assessments may include decisions on parameters and models which are not based on science but are chosen to be protective. While the need for prudence is clear, management decisions hidden in what is presented as a scientific process introduce a bias unknown to the risk manager and the public.

Compounding of upper bounds.—Upper bound models and parameters are used repeatedly in an assessment, and this compounding results in an assessment far beyond what is plausible.

Failure to present the probability of risk.—A risk estimate without an estimate of the likelihood of that risk is meaningless. Further, presenting only an upper bound risk and not a most likely risk (which may be zero) limits the risk managers' ability to see the value of various options.

Failure to present the contribution of uncertainty to the risk estimate.—The distribution of risk is a result of variability and uncertainty. Higher uncertainty widens the distribution and makes the upper bound seem higher. If the contribution of uncertainty is shown, then the risk manager has the option of reducing uncertainty by further investigation if it would make a difference.

Failure to communicate risk.—When the public is presented with a single risk estimate with no statement of how likely that risk is, they are left with the impression that the risk is "certain", and they are unable to make the risk comparisons which would be the bases for judgments about the acceptability of a risk. For example, while regulatory agencies often acknowledge that the lower bound risk is zero, in some cases the most likely risk is also zero.

We can respond to common objections to legislative requirements for risk characterization and communication as follows:

EPA is already in the process of implementing these practices.—Even though EPA may have already begun to incorporate these practices, they are not consistently understood or implemented by the regional and program offices.

These requirements would complicate and slow down the regulatory process.—Risk assessment should be appropriate to the nature of the problem, the data available, and the character of the risk. Complex data and potentially costly decisions warrant a full evaluation. However, many regulatory decisions do not require a complex risk assessment.

These requirements would freeze science.—Present methods, which do not encourage the use of all data and the filling of data gaps, inhibit science. Legislation should specify what needs to be done in risk characterization and communication; not how to do it.

Risk reduction decisions are not always based on risk assessment.—True, but such is not always made clear. Where it is clear up front that the risk assessment will not influence the decision, the risk assessment need not be done. If in the end some other basis is used for the decision, it should be so stated. If a risk assessment is done, it should be done well.

We have attached a paper, recently developed by AIHC, that identifies fundamental risk assessment precepts that we believe should be contained in any risk legislation. These risk precepts would serve as the foundation for addressing many of the deficiencies outlined in this letter.

We hope these comments aid you in your very important deliberations.

Sincerely,

WILLIAM L. HART, *Chair, Science Policy Committee.*

ENVIRONMENTAL ISSUES

Environmental Justice

THURSDAY, NOVEMBER 18, 1993

House of Representatives,
Committee on Energy and Commerce,
Subcommittee on Transportation
and Hazardous Materials,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:15 a.m., in room 2322, Rayburn House Office Building, Hon. Al Swift (chairman) presiding.

Mr. Swift. The subcommittee will come to order.

I think because we have our first two member witnesses here we will proceed.

I would say on behalf of Mr. Oxley that he is on his way and will be here shortly. It is not because he didn't want to be here at the beginning.

Today is, in my judgment, a very important hearing on environmental justice, which I think can be described at least in part as the need to ensure that all members of our society, especially minority and low-income members, do not suffer from inequitable exposure to toxic pollutants and it is becoming one of the most visible components of the ongoing environmental debate.

I am encouraged to see that members of the business and manufacturing communities have been engaged on this issue for some months now. Too often industry is merely in a reactive mode with the result that it appears to be doing nothing. There is gratifying evidence to the contrary on this matter. I applaud them for their efforts and urge them to keep strongly moving forward. They can provide a great deal of leadership in a very difficult situation.

I also want to commend the environmental, civil rights, religious and community activists who have taken this matter to heart. Their good efforts have brought this critical matter to our attention. I first heard about it in a meeting in my office in Everett, Wash. I look forward to working with those groups as well as the committee moves forward.

Obviously, solving the problems associated with the inequitable distribution of environmental burdens is not going to be easy. We all need to work together if we are going to arrive at a workable solution. The bills introduced on environmental justice are a good beginning; however, I want to stress that I, for one, am not tied to any particular legislative solution. I ask all of you to work with the subcommittee, if and when we move ahead with legislation, to attempt to resolve the various concerns that will arise.

I hope that the administration moves ahead with the issuance of its pending executive order on this subject. I believe, as do many of our witnesses, that this would be beneficial to advancing environmental justice. I look forward to the testimony of our witnesses. I thank them all for being with us today.

We will take further opening statements as members arrive, but I would like now to welcome two members. And, first, I would like to welcome my colleague from the full committee, also a subcommittee Chair of Energy and Commerce, the Honorable Cardiss Collins. And I am going to recognize you—I love asking unanimous consent requests when I am the only one in the room. I ask unanimous consent that all members be permitted to submit opening statements for the record. Without objection.

I also ask unanimous consent that the witnesses today all of whose prepared statements will be made a part of the record so that they can proceed with their summarizations. Without objection.

[Testimony resumes on p. 147.]

[The text of H.R. 1924, H.R. 1925, and H.R. 2105 follow:]

I

103d CONGRESS
1st Session

H. R. 1924

To amend the Solid Waste Disposal Act to allow petitions to be submitted to prevent certain waste facilities from being constructed in environmentally disadvantaged communities.

IN THE HOUSE OF REPRESENTATIVES

April 29, 1993

Mrs. Collins of Illinois introduced the following bill; which was referred to the Committee on Energy and Commerce

October 13, 1993

Additional sponsors: Mr. Lewis of Georgia, Mr. Serrano, Mr. Mfume, Mr. Miller of California, Mr. Towns, Mr. Torres, Ms. Eddie Bernice Johnson of Texas, Mr. Frank of Massachusetts, Mr. Gonzalez, Mr. Jefferson, Mr. Thompson of Mississippi, Mr. Filner, Ms. McKinney, Mr. Gene Green of Texas, Mrs. Clayton, Ms. Norton, Mr. Clay, Mr. Dellums, Ms. Waters, Mr. Fish, Ms. Velázquez, Mr. Richardson, Mr. Pallone, Miss Collins of Michigan, Mr. Rush, and Mr. Dixon

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A BILL

To amend the Solid Waste Disposal Act to allow petitions to be submitted to prevent certain waste facilities from being constructed in environmentally disadvantaged communities.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Environmental Equal Rights Act of 1993”.

SEC. 2. FINDINGS.

The Congress finds the following:

(1) A 1987 study by the United Church of Christ found that the proportion of minorities in communities with large commercial landfills or a high number of commercial waste facilities was 3 times greater than in communities without such facilities.

(2) The same United Church of Christ study found that approximately 60 percent of African- and Hispanic-Americans live in a community that has an uncontrolled hazardous waste site.

(3) An Environmental Protection Agency report released in 1992 found that racial minority and low-income populations experience higher than average exposures to selected air pollutants and hazardous waste facilities.

(4) A 1983 analysis by the General Accounting Office found that, in the southeastern United States, 3 of the 4 commercial hazardous waste landfills were located in communities with more blacks than whites, and the percentage of residents near the

sites with incomes below the poverty line ranged from 26 percent to 42 percent.

(5) A University of Michigan study released in 1990 found that minorities were 4 times more likely than whites to live within 1 mile of a commercial hazardous waste facility in the 3-county Detroit metropolitan area.

(6) A National Law Journal study found that penalties imposed for pollution law violations in areas predominantly populated by minorities were dramatically lower than those imposed for violations in largely white areas.

SEC. 3. PETITION RELATING TO ENVIRONMENTALLY DISADVANTAGED COMMUNITIES.

(a) AMENDMENT TO SUBTITLE G.—Subtitle G of the Solid Waste Disposal Act (42 U.S.C. 6971 et seq.) is amended by adding at the end the following new section:

"SEC. 7014. PETITION RELATING TO ENVIRONMENTALLY DISADVANTAGED COMMUNITIES.

"(a) RIGHT TO PETITION.—(1) Any citizen residing in a State in which a new facility for the management of solid waste (including a new facility for the management of hazardous waste) is proposed to be constructed in an environmentally disadvantaged community may submit a petition to the appropriate entity (described in paragraph (2)) to prevent the proposed facility from being issued a permit to be constructed or to operate in that community.

"(2) A petition under paragraph (1) shall be submitted in accordance with the following subparagraphs:

"(A) In the case of a facility for the management of hazardous waste, the petition shall be submitted to the Administrator or, in the case of a State with an authorized program under section 3006, to the State.

"(B) In the case of a facility for the management of municipal solid waste, the petition shall be submitted to the Administrator or, in appropriate cases, as determined under regulations implementing this section, to the State.

"(b) AGENCY HEARING.—(1) Within a reasonable period of time after receipt of a petition under subsection (a), the Administrator or the State shall hold a public hearing on the petition. An administrative law judge of the Environmental Protection Agency or an equivalent employee of the State, in the case of a petition submitted to the State, shall preside at the hearing.

"(2) Subject to paragraph (3), the administrative law judge or State employee shall approve the petition if, at the hearing, the petitioner establishes that—

"(A) the proposed facility will be located in an environmentally disadvantaged community; and

"(B) the proposed facility may adversely affect—

"(i) the human health of such community or a portion of such community; or

"(ii) the air, soil, water, or other elements of the environment of such community or a portion of such community.

"(3) After the petitioner has satisfied the requirement of paragraph (2), the administrative law judge or State employee shall deny the petition only if, at the hearing, the proponent of the proposed facility establishes that —

"(A) there is no alternative location within the State for the proposed facility that poses fewer risks to human health and the environment than the proposed facility (according to standards for comparing the degree of risk to human health and the environment promulgated in regulations by the Administrator for purposes of this section); and

"(B) the proposed facility—

"(i) will not release contaminants; or

"(ii) will not engage in any activity that is likely to increase the cumulative impact of contaminants on any residents of the environmentally disadvantaged community.

"(c) ADMINISTRATIVE PROVISIONS.—(1) The submission of a petition under subsection (a) stays the issuance of a permit for the facility concerned until a decision on the petition has been rendered under subsection (b).

"(2) If more than one petition relating to the same facility is submitted, the petitions may be consolidated by the appropriate official to promote the efficient resolution and disposition of the petitions.

"(d) DEFINITIONS.—For purposes of this section:

"(1) The term 'environmentally disadvantaged community' means an area within 2 miles of the borders of a site on which a facility for the management of solid waste (including a facility for the management of hazardous waste) is proposed to be constructed and in which both of the following conditions are met, determined using the most recent data from the Bureau of the Census:

"(A)(i) The percentage of the population consisting of all individuals who are of African, Hispanic, Asian, Native American Indian, Pacific Island, or Native Alaskan ancestry is greater than either—

"(I) the percentage of the population in the State of all such individuals, or

"(II) the percentage of the population in the United States of all such individuals; or

"(ii)(I) twenty percent or more of the population consists of individuals who are living at or below the poverty line, or

"(II) the area has a per capita income of 80 percent or less of the national average,

for the most recent 12-month period for which statistics are available.

"(B) The area contains one or more of the following:

"(i) A facility for the management of hazardous waste that is in operation.

"(ii) A facility for the management of hazardous waste that is no longer in operation but that formerly accepted hazardous waste.

"(iii) A site at which a release or threatened release of hazardous substances (within the meaning of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980) has occurred.

"(iv) A facility for the management of municipal solid waste.

"(v) A facility whose owner or operator is required to submit a toxic chemical release form under section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (42 U.S.C. 11023), if the releases reported on such form are likely to adversely affect the human health of the community or portion of the community, as determined by the entity that would be appropriate under subsection (a)(2) if a petition were filed with respect to the facility.

"(2) The term 'management', when used in connection with solid waste (including hazardous waste), means treatment, storage, disposal, combustion, recycling, or other handling of solid waste, but does not include any activities that take place in a materials recovery facility or any other facility that prepares, transfers, or utilizes nonhazardous recyclable materials for purposes other than energy recovery.

"(3) The terms 'release' and 'contaminant' have the meanings prescribed by the Administrator for purposes of this section.".

(b) TABLE OF CONTENTS AMENDMENT.—The table of contents for subtitle G of such Act is further amended by adding at the end the following new item:

"Sec. 7014. Petition relating to environmentally disadvantaged communities.".

○

I

103D CONGRESS
1ST SESSION

H. R. 1925

To amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to require the Administrator of the Agency for Toxic Substances and Disease Registry to collect and maintain information on the race, age, gender, ethnic origin, income level, and educational level of persons living in communities adjacent to toxic substance contamination.

IN THE HOUSE OF REPRESENTATIVES

APRIL 29, 1993

Miss COLLINS of Michigan (for herself, Mr. PAYNE of New Jersey, Mr. SERRANO, Mr. FILNER, Mrs. MEEK, and Mr. TUCKER) introduced the following bill; which was referred to the Committee on Energy and Commerce

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A BILL

To amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to require the Administrator of the Agency for Toxic Substances and Disease Registry to collect and maintain information on the race, age, gender, ethnic origin, income level, and educational level of persons living in communities adjacent to toxic substance contamination.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Environmental Health Equity Information Act of 1993".

SEC. 2. REQUIREMENT TO COLLECT AND MAINTAIN CERTAIN INFORMATION ON COMMUNITIES ADJACENT TO AREAS CONTAMINATED WITH TOXIC SUBSTANCES.

Section 104(i)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9604(i)) is amended—

(1) by redesignating subparagraphs (D) and (E) as subparagraphs (E) and (F), respectively; and

(2) by inserting after subparagraph (C) the following new subparagraph (D):

"(D) in conjunction with the listing established and maintained under subparagraph (C), collect and maintain information on the residents of communities adjacent to the areas closed to the public or otherwise restricted in use because of toxic substance contamination, including information on race, age, gender, ethnic origin, income level, educational level, and duration of residence at their present location;".

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103D CONGRESS
1ST SESSION

H. R. 2105

To establish a program to assure nondiscriminatory compliance with all environmental, health and safety laws and to assure equal protection of the public health.

IN THE HOUSE OF REPRESENTATIVES

MAY 12, 1993

Mr. LEWIS of Georgia (for himself, Ms. MCKINNEY, Mrs. COLLINS of Illinois, Mr. MILLER of California, Mr. TOWNS, Mr. SERRANO, Mr. STOKES, Ms. WATERS, Miss COLLINS of Michigan, Ms. NORTON, Mr. HOCHBRUECKNER, Mr. CLYBURN, Mr. CONYERS, Mr. PETERSON of Minnesota, Mr. EDWARDS of California, Mr. FILNER, Mr. FOGLIETTA, Mr. DELLUMS, Mrs. CLAYTON, Mrs. MINK, Ms. VELÁZQUEZ, Mr. WASHINGTON, Mr. THOMPSON, Ms. PELOSI, Mr. CLAY, and Mr. PAYNE of New Jersey) introduced the following bill; which was referred jointly to the Committees on Energy and Commerce, Public Works and Transportation, Education and Labor, and Agriculture

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A BILL

To establish a program to assure nondiscriminatory compliance with all environmental, health and safety laws and to assure equal protection of the public health.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Environmental Justice Act of 1992".

SEC. 2. PURPOSES AND POLICIES.

The purposes of this Act are—

(1) to require the collection of data on environmental health effects so that impacts on different individuals or groups can be understood;

(2) to identify those areas which are subject to the highest loadings of toxic chemicals, through all media;

(3) to assess the health effects that may be caused by emissions in those areas of highest impact;

(4) to ensure that groups or individuals residing within those areas of highest impact have the opportunity and the resources to participate in the technical process which will determine the possible existence of adverse health impacts;

(5) to require that actions be taken by authorized Federal agencies to curtail those activities found to be having significant adverse impacts on human health in those areas of highest impact; and

(6) to ensure that significant adverse health impacts that may be associated with environmental pollution in the United States are not distributed inequitably.

TITLE I—IDENTIFICATION OF ENVIRONMENTAL HIGH IMPACT AREAS

SEC. 101. DEFINITIONS.

For the purposes of this Act:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of the United States Environmental Protection Agency.

(2) ENVIRONMENTAL HIGH IMPACT AREAS.—The terms "Environmental High Impact Areas" and "EHIA" mean the 100 counties or appropriate geographic units with the highest total weight of toxic chemicals present during the course of the most recent 5-year period for which data is available, as calculated pursuant to section 102.

(3) SECRETARY.—The term "Secretary" means the Secretary of the United States Department of Health and Human Services.

(4) TOXIC CHEMICALS.—The term "toxic chemicals" includes all substances as defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980; any hazardous waste listed or identified pursuant to the Solid Waste Disposal Act; any pollutant for which air quality standards have been issued pursu-

ant to the Clean Air Act; any pollutant for which water quality standards have been issued pursuant to the Clean Water Act; all materials registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act; and all substances and chemicals subject to reporting obligations pursuant to the Emergency Planning and Community Right-to-Know Act.

(5) TOXIC CHEMICAL FACILITIES.—The term "toxic chemical facilities" includes all facilities including Federal facilities subject to a permit, inspection or review, or registration requirement pursuant to the authority of the Solid Waste Disposal Act; the Clean Air Act; the Clean Water Act; the Federal Insecticide, Fungicide and Rodenticide Act; and the OSHA Hazard Communication Standard; as well as any facility subject to reporting obligations pursuant to the Emergency Planning and Community Right-to-Know Act.

SEC. 102. IDENTIFICATION OF ENVIRONMENTAL HIGH IMPACT AREAS.

(a) DETERMINATION OF IMPACTED AREAS.—Within 6 months after the date of enactment, the Administrator of the Agency for Toxic Substances and Disease Registry, in consultation with the Environmental Protection Agency, the National Institute for Environmental Health Sciences, the National Center for Health Statistics and the Bureau of the Census, shall determine the basis for designation of Environmental High Impact Areas, either counties or another appropriate geographic unit.

(b) PUBLICATION OF LIST.—Within 12 months of enactment, the Administrator shall publish a list, in rank order, of the total weight of toxic chemicals present in each county or such appropriate geographic unit in the United States during the most recent five-year period for which data are available. The 100 counties or other appropriate geographic unit with the highest total weight shall be designated as Environmental High Impact Areas.

(c) COMPILATION OF LIST.—In compiling the list under subsection (a), the Administrator shall—

(1) calculate with the best data available the total weight of toxic chemicals present in each county by multiplying the total volume of substances containing toxic chemicals (whether waste, process or other material) by the concentration of toxic chemicals contained in these substances;

(2) adjust the weights calculated under paragraph (1) to account for the relative toxicity of the toxic chemicals;

(3) determine, with the best available data, the actual and potential exposures, and toxicity of the toxic chemicals present in each impacted area;

(4) consider and utilize all appropriate data compiled pursuant to any environmental regulatory authority and other sources, including but not limited to available data on lead-based paint and the existence of pollutants from mobile sources; and

(5) distinguish between toxic chemicals which are (A) in a contained, controlled environment such as barrels, factories, warehouses, or lined landfills for any period of time during the 5-year period; and (B) released into the air, water, soil or groundwater of the area during the 5-year period as a result of authorized or unauthorized activities.

(d) METHODS.—Within 6 months after the enactment of this Act, the Administrator in consultation with the Agency for Toxic Substances and Disease Registry shall publish for public comment the methods to be used to calculate the total weight of toxic chemicals in waste, process, or other materials, including the assumptions to be used when the precise concentrations of toxic chemicals are not known and the criteria used to account for relative toxicity, as required by subsection (b)(2).

(e) REVISION AND REPUBLICATION.—The Administrator shall revise and republish the list described in subsection (a) of this section not less than every 5 years, using data compiled for that 5-year period.

TITLE II—ENFORCEMENT INITIATIVES

SEC. 201. MANDATORY INSPECTIONS.

To assure that facilities with the highest potential for release of toxic chemicals into the environment are operating in compliance with all applicable environmental, health and safety standards, the Administrator, and the Assistant Secretary of the Occupational Safety and Health Administration shall conduct compliance inspections or reviews of all toxic chemical facilities in Environmental High Impact Areas subject to their respective jurisdictions within 2 years after the enactment of this Act, and not less than every 2 years thereafter.

TITLE III—COMMUNITY PARTICIPATION

SEC. 301. TECHNICAL ASSISTANCE GRANTS.

Subject to such amounts as may be appropriated and in accordance with rules promulgated by the Secretary in consultation with the Administrator, the Secretary may make grants available to any individual or group of individuals who may be affected by a release or threatened release from any toxic chemical facility in an EHIA. Such grants shall—

(1) be designed to facilitate access by representatives of EHIAs to the public participation provisions of this Act and other law;

(2) be used to obtain technical assistance relating to the inspection and review authorities listed in section 201 of this Act and the Secretarial study described in section 401 of this Act; and

(3) not exceed $50,000 for a single grant recipient.

Each grant recipient shall be required, as a condition of the grant, to contribute 20 percent of the total cost of the grant requested unless the grant recipient demonstrates financial need. Not more than one grant may be made with respect to each EHIA, but the grant may be renewed to facilitate public participation where necessary.

SEC. 302. FUNDING.

Within one year after the enactment of this Act, the Administrator shall promulgate regulations establishing a system of fees or assessments on toxic chemical facilities in EHIAs to substitute for appropriations as the funding mechanism for the community grant program established in section 301. The fees or assessments shall take into account the volume adjustments provided in section 102(c).

TITLE IV—IDENTIFICATION AND PREVENTION OF HEALTH IMPACTS

SEC. 401. SECRETARIAL STUDY.

Within 24 months after the enactment of this Act, the Secretary, in consultation with the Administrator, the Secretary of the Department of Labor, the Bureau of Indian Affairs, and the Commissioners of the United States Commission on Civil Rights, shall issue for public comment a report identifying the nature and extent, if any, of acute and chronic impacts on human health in EHIAs as compared to other counties. Such impacts shall include but not be limited to cancer, birth deformities, infant mortality rates, and respiratory diseases. The report shall be coordinated by the Administrator of the Agency for Toxic Substances Disease Registry, who shall work closely with the Directors of the National Institute for Environmental Health Sciences, the National Center for Health Statistics, and the Center for Disease Control, and shall seek to—

(1) isolate the impacts of environmental pollution;

(2) segregate the effects of other factors such as health care availability or substance abuse or diet;

(3) rank the relative risks posed by the toxic chemicals present in EHIAs and by the varied sources of toxic chemicals, both individually and cumulatively;

(4) take into account the need to remedy the impacts of pollution in high population density areas;

(5) evaluate the levels below which release of toxic chemicals, either individually or cumulatively, must be reduced to avoid adverse impacts on human health; and

(6) determine the impacts of uncontrolled releases.

As a result of the report in communities where the Administrator of the Agency for Toxic Substances Disease Registry has determined that adverse health impacts exist, the agency shall also make this information readily available to members of the community by providing information directly to the affected communities and tribal governments in the Environmental High Impact Areas about the release of toxic chemicals and the potential effects of such exposure.

SEC. 402. LEGISLATIVE RESPONSE.

(a) REPORT.—If the report under section 401 identifies significant adverse impacts of environmental pollution on human health in EHIAs as a group, the President shall submit to Congress within one year after publication of the report, proposed legislation to remedy and prevent such impacts. Such legislation shall include—

(1) expansion of EPCRA to include additional facilities, additional chemicals, or reduced quantities of chemicals triggering reporting obligations;

(2) means to redress regulatory loopholes (such as recycling and industrial wastes exempt from regulation under subtitle C of the Solid Waste Disposal Act and wastes subject to lessened regulatory requirements); and

(3) measures such as taxes on uncontrolled or controlled emissions, or restrictions on toxic chemical releasing activities within an EHIA to induce source reduction in EHIAs, regardless of whether facilities are in compliance with existing law.

(b) REPORT ON CHANGES AND RECOMMENDATIONS.—Within 2 years after publication of the report, the Administrator shall provide a report to the Congress which identifies all of the changes made or recommended to be made to the Environmental Protection Agency's existing regulations, the purpose for each change and the goals to be achieved as a result of the substantive changes. The Administrator shall also advise Congress of the regulatory changes that were not made because of the presence of conflicting statutory mandates or the lack of statutory authority.

(c) PROPOSED LEGISLATION.—Within 3 years after publication of the health impact study, the President shall submit to Congress proposed legislation to remedy the problems of conflicting statutory mandates or the lack of statutory authority identified in the report to Congress pursuant to subsection (b).

SEC. 403. MORATORIUM.

If the report under section 401 finds significant adverse impacts of environmental pollution on human health in EHIAs, there shall be a moratorium on the siting or permitting of any new toxic chemical facility in any EHIA shown to emit toxic chemicals in quantities found to cause significant adverse impacts on human health. A new toxic chemical facility may be cited or permitted in such an EHIA during this period only if—

(1) the need for the activity is shown to the Secretary;

(2) the owner or operator of the facility demonstrates that the facility will develop a plan and

maintain a comprehensive pollution prevention program; and

(3) the facility demonstrates that it will minimize uncontrolled releases into the environment.

The moratorium shall continue in effect in such an EHIA until the Administrator determines, upon petition of any interested party, that the health-based levels identified pursuant to section 401(5) have been attained at the EHIA.

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Mr. SWIFT. That having been done, Cardiss.

STATEMENT OF HON. CARDISS COLLINS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mrs. COLLINS OF ILLINOIS. Thank you Mr. Chairman. I am very pleased that you are holding this hearing today, and I thank you very much for inviting me to testify. Environmental equity is an issue of tremendous importance to me, to my constituents and, in ever-increasing numbers, to millions of Americans of diverse background and interests nationwide.

In April of this year I introduced the Environmental Equal Rights Act of 1993—or EERA—to promote equity, justice and community involvement in selection of locations for waste facilities. In short, it would prevent the creation of additional environmental equity problems in the future. The bill currently has 27 cosponsors and benefits from the support of 24 organizations, in addition to the participation of numerous others.

The EERA gets at the heart of the need for waste facilities to be placed only in locations which minimize the total impact on the health and well-being of nearby residents from all sources of contamination. The bill would establish a process for exercising our inherent rights respecting the development and evolution of our communities.

Repeatedly in the past, sites for many waste facilities have been chosen for the wrong reasons. Since it is politically difficult to select any location, the choice has often come down to a question of political influence: those with the least have lost.

The result is that too many facilities have been placed in communities populated largely by minorities and the poor. These sitings regularly occur irrespective of the suitability of the site and, of critical importance, irrespective of the degree to which the community is already exposed to other polluting facilities. It is a simple fact of life that these communities usually don't have the financial or political resources to compete on these issues with other neighborhoods. Consequently, as multiple facilities are placed in minority and poor communities, the residents of these communities face unjustifiably severe health hazards and have no vehicle with which to protect themselves against such exposure.

According to a study by the Commission for Racial Injustice in 1987, 60 percent of African-Americans live in communities with abandoned toxic waste sites.

Mr. SWIFT. What percentage was that?

Mrs. COLLINS OF ILLINOIS. Sixty percent.

In 1992, a study was done by the University of Michigan entitled, "Environmental Racism: Reviewing the Evidence". That study found that, within the area that it studied, the proportion of minorities in communities which have a commercial hazardous waste facility is about double that in communities without such facilities. The University of Michigan study also found that, where two or more such facilities are located, the proportion of minorities is more than triple that of communities without a facility.

Further, a 1983 analysis by the GAO found that, in the southeastern United States, 3 of the 4 commercial hazardous waste landfills were located in communities with more blacks than whites, and the percentage of residents near the sites with incomes below the poverty line ranged from 26 percent to 42 percent.

In 1979, one of the first studies on these issues, called "Invisible Houston: The Black Experience in Boom and Bust," found that all of Houston's city-owned solid waste landfills and 6 of its 8 solid waste incinerators were located in African-American neighborhoods.

And, in a 1992 report, the Environmental Protection Agency corroborated the evidence of the disproportionate impact of contaminants on racial minority and low-income populations when it concluded that these groups experience higher than average exposures to selected air pollutants and hazardous waste facilities.

Currently, projected human health impacts of a new waste facility usually don't figure into the decision of whether or not to award a permit. Once again, recent studies have found that urban, minority communities are the most exposed to particulates, sulfates and other contaminants.

Perhaps most significantly, lead levels have been found to be higher in poor, African-American, urban children than in any other group of Americans. Former Health and Human Services Secretary Louis Sullivan's declaration that lead poisoning is the number one environmental threat to children underscores the urgency of our action.

The Environmental Equal Rights Act would allow citizens of a State in which a waste facility has been proposed to be sited in an environmentally disadvantaged community to challenge the siting. A successful challenge would prevent the issuance of a permit for the construction and operation of the proposed facility.

A challenge would be based on: (1) the choice of location is within 2 miles of another waste facility, Superfund site or facility that releases toxic contaminants, and, (2) it is in a community that has a higher than average percentage of low-income or minority residents. The petitioner would also have to show that the proposed facility may adversely affect the human health or the environmental quality of the community.

Even if the petitioner makes this showing, the proponent of the facility could still defeat the challenge if it is shown: that there is no alternative location within the State that poses fewer risks, and that the proposed facility either will not release contaminants or will not increase the cumulative impact of contaminants on residents of the community.

This legislation is supported by numerous local citizens groups, by the National Council of Churches and many of its component denominations, and by many environmental groups, including the Sierra Club Legal Defense Fund, the National Wildlife Federation, the National Resources Defense Council and Environmental Defense Fund. The bill has also benefitted from the contributions of individuals and organizations who have long been part of the drive for equal justice in environmental issues.

In short, Mr. Chairman, the EERA will equip environmentally disadvantaged communities with basic tools to protect their environment and the health of their residents. These tools are necessary to compensate for the fact that people in these communities are underrepresented and have fewer resources with which to protect themselves. We should all be able to agree that underrepresentation is an unacceptable basis for exposing people to substances which can impair mental development and cause harmful health conditions. Thus, to stop short of providing these rights in these situations would perpetrate the gross injustices and exposure to great risks that have become all too common.

I urge the subcommittee to support fairness in environmental and health issues by supporting this legislation. I yield back the balance of my time.

Mr. SWIFT. Thank you very much, Congresswoman Collins.

Mr. SWIFT. We turn now to Congresswoman Barbara-Rose Collins.

STATEMENT OF HON. BARBARA-ROSE COLLINS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Ms. COLLINS OF MICHIGAN. Thank you, Mr. Chairman.

I commend you for holding today's hearing on environmental justice. Although the terms "environmental justice" and "environmental equity" have only recently entered the policy lexicons, the issue is not a new one. As early as 1971, the Council on Environmental Quality noted that racial discrimination adversely affected the ability of the urban poor to control the quality of their environments. But, believe me, while it may not have had a sophisticated Washington label, many minorities have known for much longer than that all about environmental justice or, more precisely, environmental injustice. One prestigious law journal put it this way:

"There is a racial divide in the way the U.S. Government cleans up toxic waste sites and punishes polluters. White communities see faster action, better results and stiffer penalties than communities where blacks, Hispanics and other minorities live. This unequal protection often occurs whether the community is wealthy or poor."

Environmental injustice takes several forms. It can refer to locating waste sites disproportionately in minority communities or to the emission of noxious air and water pollutants from industrial facilities into minority communities. It can mean lax enforcement of antipollution laws in minority areas or lighter fines in majority race areas. It can mean long delays in getting official recognition of a problem and a delay in the cleanup of an environmental hazard in a minority community.

In short, what it means in my view is that racial and ethnic minorities bear a disproportionately large share of environmental risk due in part to discrimination. This discrimination may be intentional and overt or it may be de facto, resulting from governmental inattention and neglect or historical patterns. Whatever the cause it is real. What is the result? Here are a few statistics:

Racial minority and low-income populations experience higher than average exposure to certain air pollutants, hazardous waste facilities, contaminated fish and agricultural pesticides.

Minorities are four times more likely than white residents to live within one mile of a commercial hazardous waste facility. In fact, race is a better predictor of residents' proximity than income.

In families with annual incomes of less than $6,000, 68 percent of African-American children suffer high blood-lead levels, while 36 percent of white children do. Lead poisoning has been called the most significant preventable disease of environmental origin.

The death rate for women with breast cancer increased 24 percent between 1979 and 1986. Today, 1 in 9 women will develop breast cancer. For African-American women the mortality rate from breast cancer is higher than for white women. Recent research has linked environmental factors and chemical carcinogens in the etiology of breast cancer. For all cancers, since 1955, the cancer mortality rate has risen 2 percent for the white population but 10 percent for African-Americans.

Women living less than one mile from a hazardous waste site have a 12 percent higher risk of having a child with a birth defect when compared to mothers who live greater than one mile from a site. I cite these numbers to make the point that this is really a human health issue. Environmental equity is at bottom the health of our people, all of our people.

Last April, I introduced H.R. 1925, a bill to require the Agency for Toxic Substances and Disease Registry to collect data on the residents of communities adjacent to areas closed to the public or otherwise restricted in use because of the presence of toxic contamination. The Agency would be required to collect information on race, age, gender, ethnic origin, income level and educational level.

This bill is needed because there is currently no legal requirement to collect this data by income, race or ethnic origin. I believe this mandate is needed not just to document injustices, but to prevent injustices. Exposing injustice can be a strong deterrent to further injustice. It is similar to the legislation your committee has recently approved to address insurance redlining which would require reporting of insurance practices in certain urban areas. Similarly, my effort could be called the Anti-Environmental Redlining Bill.

The Environmental Protection Agency's Environmental Equity Workgroup, in its June, 1992, report entitled "Reducing Risk for All Communities," found that data is not collected on environmental health effects by race and income. The workgroup recommended that EPA establish and maintain information for assessing risks by income and by race.

This bill is but a small part of the overall solution to eradicate pollution in our Nation and to better conserve our precious and limited natural resources. I offer it as you consider the larger bill and look forward to working with you to craft a strong Superfund law that protects the public health.

Thank you again for the opportunity to come before you. I look forward to working with you in the coming months.

Mr. SWIFT. Thank you very much.

John Lewis, who also wishes to address the committee, has indicated that he has a conflict, and he will come later, and we will accommodate him then.

I want to thank both of you for kicking off this hearing which I consider very important. Unless there are questions for this panel, thank you very much.

Mrs. COLLINS OF ILLINOIS. Thank you, Mr. Chairman.

Ms. COLLINS OF MICHIGAN. Thank you, Mr. Chairman.

Mr. SWIFT. I would like to recognize members for opening statements. The gentleman from Ohio.

Mr. OXLEY. I ask unanimous consent that my statement be made part of the record.

Mr. SWIFT. Without objection so ordered.

The gentlewoman from Arkansas.

Ms. LAMBERT. Mr. Chairman, I ask the same, that my statement be added to the record as well as thanking you for holding such a critical hearing.

Mr. SWIFT. Without objection, so ordered.

Ed Towns is a member of the full committee, and we are very pleased that he accepted our invitation to join the panel today on this issue. We would be happy to recognize you at this time.

STATEMENT OF HON. EDOLPHUS TOWNS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. TOWNS. Thank you for holding this hearing today. It is important to do so because, as you know, environmental racism is a big, big problem throughout, and I know that you have a person that really assisted us in terms of making everyone aware of this problem testifying today, Mr. Chavis.

I think that we have not heard the term too much over the past few years. It is something now that you hear in the halls of Congress and every place and recognizing the fact that something needs to be done about it. I would like to first congratulate him for making everybody aware of the problem and to say to you that I look forward to working with you in terms of your legislation to begin to turn around some of the things that we see in this country and begin to clean up our air.

Thank you for allowing me to come. I have a statement I would like to include in the record.

Mr. SWIFT. Without objection it will be included in the record.

We are delighted to have you participate throughout the hearing today as a member of the full committee.

Mr. TOWNS. I yield back.

[The opening statements of Messrs. Oxley, Towns, Moorehead, and Ms. Lambert follow:]

STATEMENT OF HON. MICHAEL G. OXLEY

Thank you, Mr. Chairman. I want to commend you for holding today's hearing on environmental equity and environmental justice. All Americans, regardless of where they live should receive equal protection under our environmental statutes. Clearly, there is no room for enforcement or siting practices particular groups or neighborhoods.

This is a relatively new issue for Congress. Our existing environmental statutes have concentrated on reducing or eliminating the releases of pollutants from particular sources. By and large, they have not looked at total environmental loadings.

Under existing statutes it is quite possible that all of the facilities in a given area are operating within their permitted limits, yet because of the total amount of permitted releases, the residents of some areas may be exposed to pollutants at levels high enough to cause adverse health effects.

At present we do not have a clear idea which areas of the country have these unusually high exposures. Nor do we have a clear idea of possible synergistic effects of exposures to multiple pollutants. Clearly more research and better data collection is needed if we are going to properly identify neighborhoods burdened with excessive exposures to pollutants and understand the effects of those exposures.

Mr. Chairman, I want to thank you again for holding this hearing and look forward to the testimony of today's witnesses.

OPENING STATEMENT OF HON. EDOLPHUS TOWNS

Mr. Chairman, I want to thank you for holding this hearing today. It presents a tremendous opportunity for the Congress to become better informed on how the environment we live in and the laws we have passed to protect it have different effects depending on whether one is black or brown instead of white, and rich instead of poor. I salute your efforts to inform us on this issue before we move to reauthorize either Superfund or RCRA. Further, I want to thank you for your generous invitation to allow me to participate in the subcommittee's deliberations today.

Environmental justice is a term few in government or the media could have defined 3 years ago. People would stop you in the halls to ask what it meant. Yet today we see it mentioned or implied in several bills before Congress and we are moving to create an Office of Environmental Justice in the elevated Department of Environmental Protection. I have participated in hearings on the pervasive threat of childhood lead-poisoning, nowhere so great as among people of color communities, and nowhere so clear an example of environmental injustice.

That transformation, that new awareness and focus, was the result of the work done by many groups and people, but I would say especially the work of the Reverand Dr. Ben Chavis, who testifies before us today. We had long known of disproportionate health problems in minority communities. Environmental injustice had been fought explicitly for many years; over a decade ago my former colleague, Walter Fauntroy, and Ben Chavis, were arrested in a North Carolina protest. Yet I would date the sea change in government and media attention to this issue to the First National People of Color Environmental Leadership Summit, organized by Dr. Chavis and held here in Washington just 2 years ago.

All this attention gives me hope, but it does not do the hard work that lies ahead. Clearly, environmental justice is an issue that has fallen through the cracks of our environmental laws. As I see it, much could and should be done within existing statutes, and that is part of the hard work that lies before the Environmental Protection Agency or Department of Environmental Protection. But this subcommittee and the full committee on Energy and Commerce must also work to ensure that environmental justice is more explicitly addressed when we reauthorize our important statutes. Not least of all is the work that remains for grass-roots groups and local communities, who must fight off new threats to their health and environment, and seek to clean up the problems that are already present. Many ethnic communities and neighborhoods in my district have united to oppose a municipal incinerator that many of us believe adds a horrific burden to a community already heavily dosed with hazardous wastes. I hope that what we do in Congress will provide them the tools and resourcesthey need where it counts.

Again, I thank the chairman both for this hearing today and the opportunity to participate in it. I look forward to hearing from our witnesses.

STATEMENT OF HON. CARLOS J. MOORHEAD

Thank you, Mr. Chairman. I just wanted to welcome today's witnesses to the committee. The issue of environmental justice or environmental equity is certainly an important topic, and one that the committee has not looked into with any great detail.

The area I represent, in the Los Angeles basin, has quite a diverse population of people of different ethnic backgrounds and different economic levels. As their Congressman, I am deeply concerned that all of my constituents receive adequate and equal protection under our environmental laws. Just because you are poor or live in a minority community, doesn't mean you should be subject to greater environmental risks than your wealthier neighbors.

Environmental justice is truly a grass roots concern. While Congress has yet to address the issue, local citizens groups are taking on environmental justice concerns together with State and local governments and even the business community.

I am glad to see that Congress and this administration are coninuing the effort and concern with environmental justice begun by Administrator Reilly under the administration of President Bush. In 1990, before we in Congress had even held hearings on the issue, Administrator Reilly formed the "Environmental Equity Workgroup" within EPA. This initiative resulted in the publication in 1992 of "Environmental Equity: Reducing Risk for All Communities." While this report clearly identified the lack of data and, in fact, the lack of historical concern with environmental justice, it was nevertheless the first governmental report to identify the problem and to begin to develop solutions.

There is no precise definition of environmental justice or environmental equity, but I think Administrator Reilly put it rather simply and clearly when he said, "At its core, environmental equity means fairness. it speaks to the impartiality that should guide the application of laws designed to protect the health of human beings and the productivity of ecological systems on which all human activity, economic activity included, depends."

Mr. Chairman, our environmental laws should protect us all. No one should be subject to disproportionate risks because of their race or income or other factors. I commend you for holding this hearing, and I look forward to hearing from today's witnesses.

Thank you, Mr. Chairman.

OPENING STATEMENT OF HON. BLANCHE M. LAMBERT

Thank you, Mr. Chairman, for holding this important hearing. As we draw closer to the actual drafting of language for the reauthorization of Superfund, it is essential that we consider and address environmental justice.

I come from a very poor rural district with many counties with double-digit unemployment. I also have a large percentage of minorities living in my district. I want to ensure, as we move forward, that these areas do not become the dumping grounds for this Nation's solid and hazardous waste as has occurred in the inner urban areas. The location of this country's dump sites should not depend upon wealth or race.

I also encourage this subcommittee and the Environmental protection Agency to combine their efforts to formulate a proposal to promote volunary clean-ups of abandoned sites. Many contaminated sites currently exist in low-income areas and on prime business real estate. We must enact language to encourage entrepreneurs to clean up these sites. By redeveloping these areas, we can revitalize stagnant economies and help produce much needed jobs in low income areas.

We must do all we possibly can to promote environmental justice and to preserve the rights of all citizens to protect the health of their children and their environment. Thank you.

Mr. SWIFT. Miss Kathy Aterno is our first witness today. She is the Deputy Administrator for Administration and Management of the EPA. She said that she in an earlier life was a congressional staffer, and this is her first time on the other side of the table, and she asked us to please be kind, and I told her we are always kind.

STATEMENT OF KATHLEEN ATERNO, DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF ADMINISTRATION AND RESOURCES MANAGEMENT, ENVIRONMENTAL PROTECTION AGENCY; ACCOMPANIED BY CLARICE GAYLORD, DIRECTOR, OFFICE OF ENVIRONMENTAL EQUITY

Ms. ATERNO. I remember what I used to do to see people on this side. Joining me today is Dr. Clarice Gaylord, Director of the Office of Environmental Equity at EPA.

Mr. Chairman and members of the subcommittee, I appreciate this opportunity to appear before you today to discuss an issue of deep concern to all of us, environmental justice. Administrator Browner and all of us at EPA are committed to the principle of environmental justice. We believe that the EPA has the responsibility to ensure a clean, safe environment for every American in every community.

We recognize the effects of past and present environmental conditions and that the remedies have not impacted equitably across racial and socioeconomic groups. People of color and low-income communities often face a much higher level of environmental risk than the rest of the population.

The Administrator has named environmental justice among the Agency's high priorities. She has directed all programs, both at headquarters and in the regions, to incorporate environmental justice initiatives into our short and long-term planning processes, in regulatory and policymaking activities, enforcement, pollution prevention, education and economic development.

We realize to achieve this goal it is critical to involve communities of color and low-income populations in the environmental decisionmaking processes. We are committed to establishing a blueprint for environmental justice throughout all our operations. We are currently working to meet that commitment through the National Performance Review implementation process.

In Superfund improvements announced last June, we enhanced the public participation and the effectiveness of cleanups in communities of color and low-income populations with respect to Superfund sites. The Agency has surveyed its regional offices and has identified more than 20 environmental justice pilot projects which will allow us to experiment and provide the basis for substantive policy development.

Specifically, EPA is considering environmental justice in the context of the Superfund reauthorization process. Our discussions have yielded a high level of public involvement on matters of concern to environmental justice advocates and other stakeholders.

Administrator Browner formed a working group to address these concerns. EPA will ask the Congress to require that communities have a more meaningful role in the decisionmaking process from the very inception of the clean-up process.

In addition, the Agency is also looking seriously at ways to implement environmental justice demonstration projects in conjunction with the President's Community Empowerment initiative.

In the area of enforcement, EPA is making fundamental changes in the way we do business. Historically, we have pursued violations of environmental laws on a statute-specific basis. In other words, cases were filed alleging failure to comply with only a single environmental law. The Agency now is emphasizing a multimedia approach in which we look holistically at all the environmental problems presented by a particular facility or geographical area.

The Agency is devising strategies to target inspections, enforcement action and compliance monitoring in communities that are exposed to multiple environmental stresses. We fully expect that the direct beneficiaries of this enhanced and focussed enforcement activity will be those communities bearing the greatest exposure to cumulative environmental risks.

For example, Region 5 has heightened its scrutiny of facilities in the highly industrialized area of southeast Chicago and northwest Indiana, where industry has contributed to severe surface water and groundwater degradation and to the chronic air pollution problems.

EPA insists upon recovering in cash the economic benefits that any company gained through noncompliance with environmental laws. But under our Supplemental Environmental Projects (SEP's); EPA can reduce penalties achieved above the economic benefit level in exchange for enforceable agreements to complete environmentally beneficial projects that go beyond what EPA can order them to do which is to promote pollution prevention, pollution reduction and environmental restoration.

While SEP's may appear complex, unlike the relatively simple payment of a penalty, they offer the Agency an opportunity to creatively deal with the problems plaguing communities that have legitimate environmental justice concerns.

In the area of pesticides reform, we have moved to improve the safety of our Nation's food supply to provide better protection for the people, usually low-income and people of color, who work in the fields and orchards. Our goal is to subject all pesticides used on foods to a single, strong, health-based standard; replace dangerous pesticides with safe substitutes, and to reduce overall pesticide risks and use for better protection of both consumers and agricultural workers.

Information management and data initiatives are vital. We currently are identifying the demographics around Superfund sites, solid waste facilities and other polluting sources to determine which communities are disproportionately exposed to environmental hazards. By using state of the art data management like our geographic information systems (GIS) we can develop consistent and credible GIS methodologies for environmental justice risk issues.

EPA's National Human Exposure Assessment Survey is one tool designed to generate a human exposure database to address some of the geographic and demographic questions relevant to the issue of environmental justice. NHEXAS will provide information on the magnitude, extent and causes of human exposure.

An upcoming interagency national symposium scheduled for next year on Health Research and Needs to Ensure Environmental Justice will open the lines of communication of key stakeholders in order to develop research programs aimed at filling data gaps and to design effective prevention and intervention strategies.

In addition, EPA has designed pilot assistance programs for high impact communities. These programs are meant to stimulate economic growth through efforts to train, certify and employ residents in environmental remediation, lead and asbestos removal, recycling and waste management programs. Economic development demonstration prototype projects are currently underway in Washington, D.C., Oakland, California, and Cleveland, Ohio.

Through these projects and initiatives, EPA can continue to move in the right direction towards achieving environmental justice. We look forward to working with the Congress in the days and months ahead as we work towards a common goal of protecting public health and the environment.

Dr. Gaylord and I are pleased to answer any questions the subcommittee may have, and we thank you very much for providing us this opportunity.

Mr. SWIFT. Thank you very much for coming.

[The prepared statement of Ms. Aterno follows:]

STATEMENT OF KATHLEEN ATERNO, DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF ADMINISTRATION AND RESOURCES MANAGEMENT, ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman and members of the subcommittee, I appreciate the opportunity to appear before you today to discuss an issue of deep concern to all of us: environmental justice; and to present the Agency's views on this important issue. Administrator Browner and all of us at EPA are totally committed to the principle of environmental justice for all persons regardless of race, religion, ethnic background, or income. We believe that the EPA has the responsibility to ensure a clean, safe environment for every American in every community.

We recognize the effects of past and present environmental conditions and remedies have not impacted equitably across racial and socioeconomic groups. People of color and low-income communities often face a much higher level of environmental risk than the majority population, with many of the problems arising in the areas of hazardous waste exposure, disposal, and containment. These communities continue to bear a disproportionate share of the Nation's air, water, and waste contamination problems.

We at EPA are committed to addressing this issue and are assuming a leadership role in environmental justice initiatives in order to improve the environmental quality for all Americans, including communities of color and low income populations. Administrator Browner has named environmental justice among the Agency's highest priorities and directed all programs, both at headquarters and in the regions, to incorporate environmental justice initiatives into short term and long term planning processes in regulatory and policy making activities, enforcement, pollution prevention, education and economic development strategies. We realize that to achieve the goal of environmental justice, it is critical to involve communities of color and low income populations in the environmental decisionmaking processes.

As part of the National Performance Review process, EPA has committed to establishing a blueprint for Environmental Justice throughout all its operations. I am currently working with EPA headquarters and regional offices to meet the commitment we have made in the NPIR process. I am encouraged by the strong actions taken by EPA career staff to incorporate environmental justice into our present and future operations. From Superfund administrative improvements and reauthorization to the internal reorganization and focusing of the Agency's enforcement function, Agency managers have demonstrated that they understand the environmental justice issue and have a commitment to action.

Specifically, in the areas of this committee's jurisdiction, EPA is committed to increased public participation at an earlier stage in the process of siting decisions for hazardous and solid waste facilities. Superfund administrative improvements announced by EPA last June included efforts to enhance the public participation and the effectiveness of cleanups in communities of color and low income populations with respect to Superfund sites. The Agency has surveyed its Regions and has identified more than twenty environmental justice pilot projects which will allow us to experiment and provide the basis for substantive policy development.

EPA is considering environmental justice in the context of the Superfund reauthorization process. Our discussions on reauthorization have yielded a high level of public involvement on matters of concern to environmental justice advocates and other stakeholders. Under the umbrella of NACEPT (National Advisory Committee on Environmental Policy and Technology), Administrator Browner requested the formation of a working group to address these concerns. On the basis of the working groups' proposals, the Agency is considering changes to the Hazard Ranking System which would give cleanup priority to Superfund sites located in areas burdened with multiple environmental stress.

The Agency is also looking seriously at ways to implement environmental justice demonstration projects in conjunction with President's Community Empowerment initiative. Finally, EPA will ask Congress to require that communities have a more meaningful role in the decisionmaking from the very inception of the clean-up process. These actions are based upon an open dialogue with the public and EPA program response, I believe, is in the right direction.

In the area of enforcement, EPA is committed to addressing environmental justice issues. To achieve this commitment, we are making fundamental changes in the way we are doing business. Historically, EPA has pursued violations of the environmental laws on a statute-specific basis. In other words, cases were filed alleging failure to comply with only a single environmental law. The Agency is now emphasizing a multimedia approach, in which we look holistically at all of the environmental problems presented by a particular facility or geographic area; we are concentrating enforcement actions on addressing those problems, alleging violations of more than one statute in our lawsuits. The Agency is devising strategies to target inspections, enforcement action, and compliance monitoring in communities that are exposed to multiple environmental stresses. We fully expect that the direct beneficiaries of this enhanced and focussed enforcement activity will be those communities bearing the greatest exposure to cumulative environmental risks.

For example, Region 5 has heightened its scrutiny of facilities in the highly industrialized area of southeast Chicago and northwest Indiana, where industry has contributed to severe surface water and groundwater degradation and to the chronic air pollution problems. The communities in this area are largely low income and people of color. Dr. Benjamin Chavis has characterized southeast Chicago as the worst example of environmental racism in the country.

Just last March, EPA achieved a settlement with Inland Steel Corporation for violations of the Clean Water Act, RCRA, the Clean Air Act, and the Safe Drinking Water Act; the company agreed to $3.5 million in penalties, a $19 million project to clean up contaminated sediments that threatened Lake Michigan, and $7 million in future supplemental environmental projects. This summer, we filed suit against a Sherwin-Williams paint manufacturing plant in the same corridor for violations of the Resource Conservation and Recovery Act, the Clean Air Act, and the Emergency Planning and Community Right-to-Know Act.

Other Regional efforts abound. Region 10 has developed an enforcement targeting system with environmental justice as one of the decision criteria. Region 9 has initiated inspections based upon the justice concerns. These are only the beginnings of the future of enforcement.

A key aspect of using enforcement as a tool to help reduce the heightened risks borne by certain communities is implementation of supplemental environmental projects, or "SEPs." EPA insists upon recovering in cash the economic benefit that any company gained through non-compliance with environmental laws. But under our SEP policy, EPA can reduce penalties achieved above the economic benefit level in exchange for enforceable agreements to complete environmentally beneficial projects that go beyond the injunctive relief that EPA can order—projects that promote pollution prevention, pollution reduction, environmental restoration and environmental auditing.

SEP's are complex—unlike the relatively simple payment of a penalty—but they offer the Agency an opportunity to deal creatively with the problems besetting communities that have legitimate environmental justice concerns. We are working with the Department of Justice to identify those cases in which SEPs may offer a partial solution to these problems.

In our enforcement initiatives, EPA has not overlooked the role of Federal facilities; these facilities are an enforcement priority due to their sometimes low rate of compliance with the environmental laws. The fiscal year 1993/1994 Federal facilities multimedia enforcement/ compliance initiative involves targeting at least two high priority facilities for inspections and follow-up enforcement. Environmental justice is one of the key ranking factors—along with factors such as risk and pollution prevention opportunities—for selecting facilities for this initiative.

A top priority is to reform our pesticides laws. We have moved to improve the safety of our Nation's food supply to provide better protection for the people, usually low income and people of color, who work in the fields and orchards. Our goal is to subject all pesticides used on foods to a single, strong, health based standard; and replace dangerous pesticides with safe substitutes, and to reduce overall pesticides risks and use for better protection of both consumers and agricultural workers.

In addition to strides in Superfund and Enforcement, information management and data initiatives are underway to identify the demographics around Superfund sites, solid waste facilities, and other polluting sources to determine which communities are disproportionately exposed to environmental hazards. We recently held a National Environmental Justice/Geographic Information Systems (GIS) Forum for EPA national and regional program managers. The forum brought environmental justice policymakers and technical experts together opening the line of communications necessary to build effective approaches using state-of-the-art data management systems. The ultimate goal is to develop consistent and credible GIS methodologies for environmental justice risk issues.

Under the Clean Air Act and as part of the Urban Area Source Program, EPA is continuing a series of urban studies identifying risks to populations from aggregate exposures to many air toxics. Such studies typically evaluate cancer and noncancer health endpoints at numerous urban locales and are a function of many parameters such as source type, proximity of persons to sources, and magnitude of exposures to multiple pollutants. Such studies allow an assessment of particular population groups that suffer from the highest levels of individual risk, including cancer. Overlaying risk distribution patterns from these studies with socioeconomic statistics available from census data gives some sense of differential risks seen by various population groups. This type of analysis provides an indication of unequal risks related to urban sources of toxic emissions.

We have begun to recognize that studies linking health risks, pesticides, and diet may not address environmental justice issues. We intend to correct this. We can no longer assume that people of all economic backgrounds and income levels eat the same kinds and amounts of food as presumed in some studies. Environmental justice dictates that in some cases we need to explore cultural, ethnic, and income-related variations in eating habits when the Agency sets pesticides tolerances for food.

Fish consumption is an excellent example of important variations in eating habits. Currently, our criteria for toxic contamination in fish are based on how much fish the average American eats over a lifetime. Yet some people—low-income people-of-color, Asian communities, and Native Americans for example—may eat much more than the average, and therefore face commensurately higher risks than the average American. We are examining changes in the manner criteria are set.

The National Human Exposure Assessment Survey (NHEXAS), currently being developed by EPA's Office of Research and Development (ORD), is designed to generate a human exposure database to address some of the geographic and demographic questions relevant to the issue of environmental justice. NHEXAS will address the exposure-based component by providing information on the magnitude, extent, and causes of human exposure.

A variety of health research studies will need to be conducted, and a combination of approaches developed, in order to address the effects-based component. EPA, in conjunction with the US Public Health Service, designed the Lower Rio Grande Valley Environmental Study to investigate human exposures to environmental contaminants along the US/Mexico border. This work began as a result of reports of increased rates of anencephaly (birth defects involving the brain) in Brownsville, Texas and Matamoros, Mexico. What we hope to learn are the sources of contamination and identify the pathways of exposure.

An upcoming interagency symposium on "Health Research and Needs to Ensure Environmental Justice" will develop constructive communication among key stakeholders, (e.g., affected communities, regulators, scientists, elected officials, etc.) in order to: a) develop research programs aimed at filling data gaps in several critical areas (e.g., health, exposure, prevention, intervention): develop methods to better identify areas and communities where environmental justice issues arise, and design effective prevention and intervention strategies.

In efforts to empower communities, EPA has designed "self help" and financial assistance programs for high impact communities. In addition to environmental restoration, these programs are meant to stimulate economic growth through efforts to train, certify and employ residents in environmental remediation, lead and asbestos abatement, recycling and solid waste management programs.

Economic development demonstrations projects totaling $350,000 are currently underway in Washington, D.C., Oakland, California, and Cleveland, Ohio as prototypes for national programs. In addition to these Agency sponsored projects, EPA will offer $500,000 in direct funding through a mechanism similar to the Superfund Technical Assistance Grants (TAG), scheduled to begin in January 1994. The grants will be issued in support of environmental justice-related projects to local organizations engaged in community awareness, environmental or health assessments or research, monitoring activities or clean up demonstrations.

Through these projects and initiatives, EPA is moving in the direction of achieving environmental justice. I will be pleased to answer any questions that the subcommittee may have. Thank you.

Mr. SWIFT. Dr. Gaylord, welcome as well.

The charge has been leveled at EPA that it has historically not had adequate minority representation at the senior decisionmaking levels. What progress has been made in rectifying that trend and can you tell us what the figures might be for fiscal year 1993?

Ms. ATERNO. As you may know, EPA does not have its total team on board right now. In our Office of Solid Waste and Emergency Response, Elliott Laws, is an African-American. We also have the first Native American Regional Administrator at the EPA based out of our Denver regional office.

We are in the process of still securing over eight positions to fill in our regional offices and have two vacancies within our major program areas at headquarters.

Mr. SWIFT. I know that there is an effort on the part of the administration, a policy they call diversity. I also know that a lot of these appointments are going very slowly. It is something that the committee is interested in generally and, as you get that team together, we would appreciate having some figures breaking it down.

Because you get the right people in those senior positions and some of these problems can take care of themselves I think.

Ms. ATERNO. On other individuals that are in our major program areas a number of them come from States—we have two from California who are extremely sensitive and knowledgeable on these issues. And one of the things the Administrator was looking at when she put her team together was the sensitivities of diversity and sensitivity to ethnic and low-income issues.

Mr. SWIFT. Mr. Laws has been a witness before the committee recently, and we are hard at work with him on some Superfund legislation. Thank you for that.

What specific efforts is the Agency making to address concerns that current research and development efforts and data collection analysis don't lead to the promulgation of rules that adequately protect disadvantaged communities? The charge has been made that these communities don't get adequate consideration going clear back to where research and development efforts and data collection go.

Ms. ATERNO. We are doing several things. One, as part of promulgating rules, we are opening up and providing much more public participation into the process. In a recent air ruling we had a field hearing and provided communities in the location to have an opportunity to comment.

We also, as part of our national human exposure assessment survey, are improving the data and the science.

We are also for the first time as part of a government-wide effort exchanging information electronically and pulling in our sister organizations that have the expertise in health-related areas to share information to build better databases.

Ms. GAYLORD. I might add that as our laws and regulations are coming up for reauthorization and development that we are inserting language related to environmental justice to make sure the data includes the collection of information on race and income as well.

Mr. SWIFT. So some of the concerns that were raised by the two Congresswomen are being addressed?

Ms. GAYLORD. Yes, yes. As they come up we are inserting language in the bills.

Mr. SWIFT. How long do you think it would take to get everything covered so we are beginning to build a database in all areas? From what you told me you are going through a cycle and will fill it in as it comes. Does that cycle take a year or 2 years——

Ms. ATERNO. We are in the process of streamlining and reviewing all our rules and regulations, and as we go through that process we are going to be looking at environmental justice as well as all of our programmatic areas. So I can't say it is going to happen overnight, but we are making progress if we continue to receive the resources necessary to move it along.

Mr. SWIFT. But there is no way to put a time line on how long it takes to get through these. These aren't like authorizations that come up every few years?

Ms. GAYLORD. No. As they come up my staff sits on the regulation development committees so we will be involved in all of the regulations coming up for renewal, and we are inserting our information there.

Mr. SWIFT. Do you assume that at some point after a certain amount of time has passed that if there are some things you are not getting to because there is apparently no need to review those regulations for other reasons that some direct action could be taken rather than waiting until you get around——

Ms. ATERNO. Yes.

Mr. SWIFT. You are trying first to do it as it comes up and at some point you can take a more direct action if it seems necessary. Good.

Some suggest that one means to promote environmental justice is to require States that receive Federal funds for the implementation of federally mandated environmental regulations have to comply with Title VI of the Civil Rights Act. What do you think of that proposal?

Ms. ATERNO. Title VI of the Civil Rights Act of 1964 is on the books. It provides agencies like EPA the opportunity to conduct activities ensuring that Federal moneys do not support discrimination. Some of the activities that the Agency is undertaking are complaint processing. We have developed a pilot project on external review of contracts and grants, which is also a process that we can streamline so that when we are giving State moneys they upfront do an audit explaining that they fully understand that the money they are receiving is subject to title VI requirement and this will help them in the future so they are only filling out forms one time, but they are providing much more information upfront.

We do have a couple of Title VI violations currently pending that are going through discovery right now.

Mr. SWIFT. On some of the things we are proposing here in the bills that we are considering today—it seems to me they might need a more direct and ultimately a more effective way of dealing with it than what would seem to me to be a more indirect way through Title VI.

Do we need both? Does one supplant the other? Or do they do different things?

Ms. ATERNO. I think they do different things. The administration has not had a formal position on these bills so the opinions here expressed are my own. I think that some of the things we are moving toward in EPA are even more advanced to some degree than some provisions in 1924. I would like to ensure that there is community participation and community empowerment in the petition process.

As drafted in H.R. 1924, it allows one citizen to prohibit the siting of a facility in a particular community. We could be creating a scenario where more weight is given to one citizen's views than those of a community. I believe in the process that if we give notice, comment and a full public hearing and by developing a list of key questions like has the community examined whether alternative locations might pose fewer environmental risks and whether there are already hazardous or solid waste facilities in the area. We can foster that partnership, protect public health as well as economic development.

I am concerned that some definition language in the bill has something that simply doesn't respond to the realities of a given site. A two-mile radius does not provide us the flexibility in comparison to definitions provided under pressure like Superfund which uses four-mile radius.

Also, there is a problem with the definitions of a low income community—we have a situation where the income criteria in the bill is very limiting because what it would do is it would literally exclude certain States with incomes below the range. I would suggest that we adjust it to a State-by-State basis. They also have things in there that I would not promote doing in terms of leaving permit approvals up to administrative law judges to develop alternative locations. I don't believe they have the expertise to evaluate that, and I would consider that to be something that should come in the application process by the permittee.

I think that in your beginning question, talking about whether or not we should be doing title VI or having bills like this, I think we need all the tools available to us to work in the direction of environmental justice. So I think I applaud all the representatives that have introduced legislation because it keeps the issue alive, and it moves us in the right direction. That is my opinion.

Ms. GAYLORD. I wanted to add that clearly the Agency has been under criticism in the past for nonuse of existing legislation like title VI. We have been working to address that issue and, as Kathy mentioned, the Agency now has title VI cases, and we hope to utilize that law more often as well as welcome new legislation to help in the effort in reversing the effects on these communities.

Mr. SWIFT. Do you have any idea when the Agency may have positions on the specific proposals, for example Representative Cardiss Collins' bill, H.R. 1924? I think she has requested a report on that several months ago. Are you getting to where you can provide us with some official response to these things?

Ms. ATERNO. Yes. As you know, environmental justice is a relatively new area, particularly for some Federal agencies, so the review process is taking a little bit longer than anticipated. I think an answer will be forthcoming in the future.

Mr. SWIFT. I think that would be very helpful, and I think some of the personal observations you made were helpful.

My sense in talking with some of the sponsors of this legislation is they also know this is a new area and that the proposals they make are not set in concrete. They want to explore what is going to make it work best, too, and I think the kind of input that you can give this committee over time on what could make these work better and be more effective could be very helpful to the committee consideration.

The gentleman from Ohio.

Mr. OXLEY. Thank you, Mr. Chairman.

Ms. Aterno, EPA's 1992 report, Environmental Equity, found that the incidence of lead poisoning which this committee is well aware of as a health problem seems to be particularly tied to race, but that same report cited several studies that found income to be a more powerful predictor of cancer incidence than race. Yet in the next panel we will hear about the United Church of Christ study which found the location of uncontrolled waste sites to be correlated most strongly with race, not income. Which types of environmental risk does the Agency believe are tied to income and which are tied to race and should our strategies differentiate between the two?

Ms. GAYLORD. The Agency currently takes the position that both race and income are involved, social status and race are involved, and it is true in our report and in some circumstances particularly when we are dealing with lead poisoning that race seems to be a predominant factor. But from the data we have been gathering we have been addressing both issues, not one over the other, in our risk assessment.

Mr. OXLEY. Yesterday it was reported that EPA's Office of Research and Development was conducting a study to look at how race and income play a role in the location of pollution sites. Based on the findings of EPA's report this research is clearly needed, and the committee looks forward to getting additional data on the issue. Can you tell us what other research initiatives the Agency is engaged in that might provide a clearer delineation of the environmental justice situation?

Ms. GAYLORD. Ms. Aterno mentioned that we are engaged in the NHEXAS study which is including demographic data as well as clinical monitoring of populations.

We know that sister agencies like ATSDR is getting ready to engage in something called the Delta Mississippi Project which will be a health assessment of communities along the Mississippi Delta. I think they are covering seven States. They are doing demographic collection of data as well as health monitoring, and that will be another piece of information.

We are also hosting a Health Effects Research Conference here in the city in February which involves the collaboration of other Federal agencies like NIEHS, the National Institutes of Environmental Health Sciences, ATSDR, Department of Energy, Department of Agriculture and several other agencies, and it will be assessing the state-of-the-art of the research needs in this field to see that we can agree on what are the next future directions in this field.

We recently held a conference internally at EPA with all of our GIS workers, our data gathering and collection experts and our environmental justice coordinators to sit down and agree on what were the criteria and the standards that we should be using to start uniformly collecting information on demographics so that we can help the Agency's efforts. We found that some of our regions were already using demographic data in their decisionmaking for enforcement efforts, et cetera. We are trying to make that uniform throughout the Agency. So this was the first conference we held on that effort.

So there are a number of activities that we are using to try to get standardization in collection and application of data.

Mr. OXLEY. Ms. Aterno, many studies all over the world have found a positive correlation between wealth and health. As people's wealth increases so does their health. As a matter of fact, that was part of the debate yesterday.

As we look at the environmental justice issue in the context of Superfund, for example, how important is it that we look at creating incentives for attracting well-paying jobs into these communities or do you believe environmental health concerns should be separate from the economic issues?

Ms. ATERNO. No, the NACEPT process that is one thing we are pursuing. NACEPT is an advisory committee that has been established in EPA where it brings together business, industry, community, government, to discuss all of where we should be going in this area, and I think they are coming up with some pretty good recommendations and you might hear things later from future speakers. I am happy to follow up and provide you additional information from the committee, our internal committee in this area.

Mr. OXLEY. But your sense is there is certainly a correlation?

Ms. ATERNO. Absolutely.

Ms. GAYLORD. I think you are dealing with communities that are suffering the effects of institutionalized racism, in education, employment, and housing. Health care delivery is also an important issue. A lot of residents of these communities don't have access to good health care, so I think you can't do one without the other. We will have to talk about a rebuilding of these communities that have been suffering from adverse exposure.

Mr. OXLEY. But we are talking about more than delivery of health care. We are talking about economic expansion and creation of jobs.

Ms. ATERNO. You should know, from studies, when a new facility comes up only about 8 to 10 percent of those jobs go into the communities. Most are very scientific and technical, and people come from outside the community to work in those facilities. And one of the things in trying to get good corporate partners in neighborhoods is to bring in additional jobs into the area and provide the training opportunities to employ more individuals in those areas.

Ms. GAYLORD. And we are noticing that a lot of the socioeconomic gains that the corporations say that they are putting into the community sometimes don't materialize. We have some cases where the communities are not benefiting from those industries there, and we are working with corporations to make sure they are good corporate neighbors in communities like this. We are asking them to reduce risk, reduce pollution and to give back to the communities in which they are sited.

Mr. OXLEY. One of the areas that is of interest to me and others is the enterprize zone concept that Charlie Rangel and Jack Kemp and others have worked on. It seems to me one of the better solutions to the problem is in fact to generate employment in those particular areas that are most hard hit, and, hopefully, the administration will follow up on that concept.

Ms. ATERNO. In the past 2 weeks we kicked off a project in Cleveland, Oh. on this. The Administrator and Reverend Chavis were there.

Mr. OXLEY. That is one of the reasons I brought it up. I saw several references to it in the Cleveland Plain Dealer. I am from Ohio and am interested in that project.

Ms. ATERNO. That is right now one of our pilot projects that we are just moving on, and we are hoping that we over time can do more of these.

Mr. OXLEY. Thank you.

Mr. SWIFT. Thank you.

The gentlewoman from Arkansas is recognized.

Ms. LAMBERT. Thank you, Mr. Chairman.

I believe my question is along the lines of my colleague, Mr. Oxley. When we talk about the many contaminated sites in the low-income areas—I represent the Mississippi Delta, the eastern half of Arkansas along the Mississippi. I have a large population of minority, low-income communities, and the reference you made was that the Lower Mississippi Commission report or is it a separate report——

Ms. GAYLORD. It is a separate report that is coming out of ATSDR—it is called the Mississippi Delta Project. They are getting ready to launch their project which is strictly based in health assessments in that area.

Ms. LAMBERT. There was a tremendous amount of work done by the Lower Mississippi Commission, and, hopefully, they will use some of that information from the Delta Commission Report which presented to us in black and white a great deal of the health risk problems that we currently have and how to address them. We need the implementation, and I think some of the legislation that we are discussing today is a good beginning on that.

As we look at the contaminated sites in the low-income areas that are sitting on valuable land as far as development is concerned, what is EPA doing to help build incentives for the industry that would want to come in and revitalize? You have got potential fears among developers of Superfund liability, and I am just very interested to know what EPA is doing as far as incentives to help those developers come in.

What we are looking at in low-income communities is a lack of jobs. Out of my 25 counties, I have double-digit unemployment in three-quarters of them. Is there a move on at EPA to create incentives for those developers?

Ms. ATERNO. As part of our Superfund reauthorization process we are examining a number of alternatives, and the demonstration project in Cleveland is a prime example at looking at brown fields, turning them back into productive economic communities.

Ms. LAMBERT. Is that voluntary cleanup?

Ms. ATERNO. I can't answer that question at this time. I am not intimately involved in all aspects of this process. But I would be happy to get back to you on that.

Ms. LAMBERT. That would be helpful. I would like to know that EPA is encouraging that voluntary cleanup.

Thank you, Mr. Chairman. I yield back the balance of my time.

Mr. SWIFT. I would make a note before I recognize Mr. Towns that I am extremely hopeful we are going to be able to get a Superfund reauthorization in this Congress. It is going to be difficult to do, but it is a logical place to take the issue. We have a hearing today and include that in it and move ahead.

Frankly, the reason for the timing of this hearing is that I want to do it in the context of a rewrite of Superfund, and so the two, in my judgment, should be tied together.

I recognize the gentleman from New York.

Mr. TOWNS. Mr. Chairman, let me begin by thanking you again for allowing me to participate. It is also good to see you. I know you understand the frustration that we have on this side as well. I am comforted by seeing you.

The other things—you talked about in your written testimony about EPA's being committed to addressing the issue of assuming leadership roles in the environmental justice initiatives in order to improve the environmental quality of all Americans. Can you tell me more about EPA's effort to determine the scope of environmental racism and how you plan to monitor it and, hopefully, in terms of being able to end it?

Ms. ATERNO. Right now we are developing our strategic plan. The way we are organized at EPA is traditionally on a very media-to-media basis. We are trying to look at things in a multimedia approach to be able to gauge and move towards collecting better data, manipulating better data, analyzing it and providing it to the public. I think we are also looking at this issue in total in terms of enforcement, what we are doing in that area.

You know, I would like to see in my lifetime that we correct this—the injustices. I don't know in my tenure at EPA if that will happen, but I believe that we will have successfully put enough in place the infrastructure to move in the right direction.

Ms. GAYLORD. We are working on a strategic plan Agency-wide to address this problem systematically throughout all of our programs. Administrator Browner has dictated that this is not just an issue for an Office of Environmental Equity. It is to be integrated into every program in every region within the Agency.

One of the problems we have is making sure that we have adequate baseline data on how extensive the problem is. That is one of the reasons why we are trying to standardize collection of data so that we can assess exactly what is going on and from there develop indicators of success as we develop this program. Clearly, this is at the beginning, and we are trying to decide on what those end points are.

Mr. TOWNS. We have a bill by Congressman Bill Richardson from New Mexico called the Environmental Justice Act. Many of the communities that we are trying to help could qualify as high-impact areas. There are abandoned industrial sites in my district, chemical spills, air pollution and lead poisoning problems. Yet there are proposals to place a further burden on the area by building a new large 3,000 ton per day municipal incinerator. I tried to prevent such concentration in the area, and that is I guess the reason I am really so concerned about being able to move ahead quickly.

What is EPA doing to address multiple impacts from different media and the concentrated effects facilities place in areas that are already oversaturated? They are bringing an additional incinerator in. What can we do to stop this concentration and saturation?

Ms. GAYLORD. This has been a problem that EPA has not been effective in addressing in the past. Some of the States are starting to propose their own legislation.

For instance, one of the most progressive is New York legislation on environmental justice, and a lot of this is occurring at local levels where local zoning occurs, and there is very little Federal intervention at the local level. There is no trigger that I think that we need to help address this problem more effectively.

But in the case of New York, New York is requiring that every time an entity requests a permit to build any facility, they also have to submit demographics of the community in which they are siting. If the community is deemed to be low-income or predominantly minority, then they also have to submit a community economic development plan for that community in which they are sited.

I think it is bills like that that will help us. They are requiring the petitioner to also look at the whole picture, what is the total impact on that community.

I think until we put these kinds of requirements on each permit that is given—right now, each permit that is given looks in isolation at the sites, but we must require them to look at the whole impact. I think until that kind of legislation occurs at the Federal, State and local level and is enforced then we are going to continue to have the problems that we have with multiple sitings in these communities.

Mr. TOWNS. I hope EPA will take a serious look at my legislation, and I hope at some point you can sign on because I think it is needed legislation.

Mr. SWIFT. We thank you both very much for your participation and help with the committee. We will be continuing to work with you as we develop Superfund legislation.

Mr. SWIFT. I would like to recognize now John Lewis. We have already received unanimous consent to submit formal statements for the record.

STATEMENT OF HON. JOHN LEWIS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. LEWIS. Thank you, Mr. Chairman.

Mr. Towns, Mr. Chairman, you can tell that I don't have much of a voice after yesterday and last night, and so I have been advised by my doctor to give my voice a rest. So Mr. Chairman, I would like to submit my complete statement for the record and just tell you that I want to thank you for holding this hearing today.

I have introduced H.R. 2105, the Environmental Justice Act. Last year Senator Gore and I introduced the Environmental Justice Act of 1992. This year I am proud to have been joined by Senator Baucus who introduced the Environmental Justice Act of 1993 in the Senate.

I have said over the years that it is my belief that all of us have a right to know what is in the air we breathe, the water we drink and in the food we eat. It affects our lives and health. It is my hope and prayer, Mr. Chairman, that you see that this legislation move with all deliberate speed through your committee and through the House. Thank you very much.

Mr. SWIFT. Thank you very much, Congressman Lewis. We will continue to work with you on your proposal and other proposals as well as with the administration towards the end that we try to make this a major part of Superfund. Thank you. I hope your voice gets better. We need your voice.

[The prepared statement of Mr. Lewis follows:]

STATEMENT OF HON. JOHN LEWIS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. Chairman, I want to thank you for holding this hearing today. As you know, I am the sponsor of H.R. 2105, the Environmental Justice Act. Last year, then-Senator Gore and I introduced the Environmental Justice Act of 1992. This year, I am proud to have been joined by Senator Baucus, who introduced the Environmental Justice Act of 1993 in the Senate.

It is my belief that all of us have a right to know what is in the air we breathe, what is in the water we drink and what is in the food we eat. It affects our life. It affects our health.

A dirty environment hurts the health of our communities, We must consider the impact of pollution on our communities—how to leave our communities a little cleaner, a little greener for unborn generations.

People have a right to know how landfills, hazardous waste sites, manufacturing plants, incinerators and other polluting facilities in their communities affect their health. They need to know how each facility affects their health. And, they need to know how the combination of facilities affects their health.

It is becoming very clear that there is a strong and important connection between health and the environment. Lead poisoning in children is the most well-researched example. Even at very low levels, lead poisoning harms a child's development and lowers IQ scores.

But lead is not the only problem. In Augusta, Georgia, a former wood-treating facility has left the air, the soil and the groundwater contaminated. In the community of 400 near the site, approximately 40 people have died over the last 2 years from cardiovascular, respiratory or cancer-related diseases associated with toxic poisoning.

In Louisiana, the corridor between Baton Rouge and New Orleans is notorious. It is home to 138 petrochemical facilities and is known as "Cancer Alley" for the high incidence of cancer in the communities along this corridor.

On the southeast side of Chicago, residents of a public housing development live on the site of a former garbage dump and are surrounded by landfills, toxic wastes sites, a sewage treatment plant, and a range of industries that use coke ovens and blast furnaces. Residents in this community suffer an unusually high rate of cancer, kidney problems, birth defects, respiratory problems and skin rashes.

As you will hear from others here today, communities all over this country are suffering adverse health effects from environmental pollution.

Unfortunately, most of the evidence about this very important link between our health and the environment in which we live and work is anecdotal. According to the EPA, "for the diseases identified as environmentally induced, little evidence exists identifying the contributions of class, race or ethnicity. The United States is the only western high-income country whose government does not collect mortality statistics by Class indicators, such as income, education, and occupation" (U.S. Environmental Protection Agency, Environmental Equity, Reducing Risk for All Communities, June 1992, Volume 2, page 5. and Volume 1, page 11.) We need this information.

It is true that we have important and necessary environmental laws, such as the Clean Air Act and the Clean Water Act. These laws are directed primarily protecting our environment. We need them.

The Environmental Justice Act is directed primarily at protecting people. We need it, too. Together, they come closer to accomplishing the goal of protecting this planet of ours.

The Environmental Justice Act would look at the health effects of pollution. It would mandate that we also look at the combined effects of pollution.

It calls on the EPA and the Department of Health and Human Services as well as other agencies to share their expertise and cooperate on addressing environmental justice.

In addition, this legislation is an important first step toward dealing with the fact that some communities have an unfair share of polluting facilities.

Mr. Chairman, thank you for giving me the opportunity to appear before your committee today. I look forward to working with you on this very important issue.

Mr. SWIFT. Our next panel includes Dr. Benjamin Chavis, The Most Reverend James W. Malone, Mrs. Hazel Johnson, Deeohn Ferris and Dr. Robert Bullard.

As I think you are all aware, we have already received unanimous consent to make your formal statements part of the records, and you may proceed as you wish.

I am going to recognize first Dr. Chavis. We are aware that you have some other engagements on your schedule this morning so we want you to feel free to leave whenever you feel you have to. With that, I am happy to recognize you.

STATEMENTS OF BENJAMIN F. CHAVIS, JR., EXECUTIVE DIRECTOR, NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE; JAMES W. MALONE, BISHOP, YOUNGSTOWN, OH., ON BEHALF OF NATIONAL RELIGIOUS PARTNERSHIP FOR THE ENVIRONMENT; HAZEL JOHNSON, ON BEHALF OF PEOPLE FOR COMMUNITY RESPONSIBILITY; DEEOHN FERRIS, DIRECTOR, ENVIRONMENTAL JUSTICE PROJECT, LAWYERS' COMMITTEE FOR CIVIL RIGHTS UNDER LAW; AND ROBERT D. BULLARD, DIRECTOR OF RESEARCH, CENTER FOR AFRO-AMERICAN STUDIES, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Mr. CHAVIS. Thank you, Mr. Chairman.

On behalf of the NAACP first let me also thank you for having this important hearing. The issue of environmental justice is an issue of life and death. It is one of the most important issues affecting our society. One of the benefits of not being the first witness but listening to the Members of Congress and to the EPA testify, I made some notes. You have my written testimony, and for the sake of time I won't read it but just highlight it.

I want to respond to some of the questions already raised for points of clarification. I wish Mr. Oxley was here because I wanted to respond to something he said about the study we did in 1987 entitled Toxic Waste and Race. That was a study that looked at our Nation as a whole. Every zip code in the United States, including Alaska and Hawaii, was researched, and we tested for several variables, income, race, geology, a number of other variables.

Our study showed—which has been the only national study—showed that race was the most determinative factor in the location of these facilities. We tested for uncontrolled sites as well as controlled sites.

Mr. Chairman, in your comments you mentioned several times that you believe that the issues that we are discussing can properly be handled with the reauthorization of Superfund. I think that some of the issues that we have discussed can be dealt with with reauthorization of Superfund but not all of them. For example, later you will hear from Hazel Johnson from the south side of Chicago. Her area is not on the Superfund list and would not be covered.

I think that the issue of environmental justice demands that the Congress do something comprehensive. I do not believe that the issue of environmental injustice or the issue of racism is a new issue. It is not a new area. Racism is not new to America. Racial discrimination is not new. If there is anything new it has been a growing admission based on the evidence presented that there has been racial discrimination in environmental policymaking, that there has been racial discrimination in certain communities being targeted for some of these facilities and on the three pieces of legislation that have been mentioned today, H.R. 1925, H.R. 1924 and H.R. 2105.

I am primarily going to give testimony in support of H.R. 2105, although I would like to commend Congresswoman Collins of Illinois and Congresswoman Collins of Michigan for their bills. One seeks to amend RCRA and one seeks to amend Superfund.

But the Environmental Justice Act has been offered as a freestanding bill, and I would just like to say for the record that this bill is to establish a program to assure the nondiscriminatory compliance with all environmental health and safety laws and to assure equal protection of the public health.

When we talk about environmental justice and environmental injustice we are talking about a fairly broad phenomena. It is not something just related to a toxic waste dump, it is not something just related to disproportionate exposure to pesticides, it is not something just related to lead poisoning. It is all of that and even more. We are very concerned that for the last 10 years the EPA under prior administrations worked hard, first of all, to deny that this was a problem and then engaged in administrative maneuvers to avoid any real response.

The administration has changed, and I was pleased to hear the EPA say what it did today but the NAACP does not believe anything will be done until Congress enacts a law. We support the President's executive order if and when it happens on environmental justice, but we also do not believe that an executive order from the President should supplant what Congress should do to enact a law that will require equal protection under the law of all environmental laws.

Even existing laws we have on the books, RCRA and old Superfund, were not being enforced equally when it comes to people of color communities in America. By analogy we worked hard to desegregate the schools, to desegregate things that under prior law was legal. We think it is illegal for our Nation's environmental laws not to be enforced and to have a situation where laws are being enforced where race is a factor to determine how aggressive the enforcement takes place.

So it is a very serious issue, Mr. Chairman.

Again, I want to thank you for having this important hearing. When the specifics of reauthorization of Superfund are argued we will be there. Also at RCRA. But we believe there should be a freestanding bill entitled the Environmental Justice Act, and that is why I would like to support the language of the bill that has been introduced by Congressman Lewis and supported by Congressman Towns and others entitled the Environmental Justice Act.

On the Senate side there has been one hearing on the companion bill introduced by Senator Baucus. We think it is very important that we address the issue of environmental justice much more comprehensively and not as sort of a piecemeal. Only get part of the problem for legislative review.

Just let me say that the Environmental Justice Act intends to address environmental toxics whether they are the by-products of economic activity intentionally or carelessly discarded into the environment or the excessive workplace exposures or the random distribution of toxics from every day activities. The NAACP believes that the cumulative exposure to these toxics, particularly for people who live and work in these less healthy environments, must be addressed, and that is why we support the Environmental Justice Act.

Some would suggest that there is insufficient data on which to base the conclusion that there needs to be an investment to protect the health and welfare of minority and poor communities from toxic exposure. The Environmental Justice Act does not conclude that unhealthy exposures exist. It does require, however, the resources and information available to the Federal Government be quantified to determine whether and where excessive toxic exposures exist. Then, and only then, does the Environmental Justice Act require that steps be taken to alleviate these exposures.

Mr. Chairman, the epidemiological threshold that everybody argues about, the EPA report that issued last year, basically ducked this question. I would like to know as a citizen of the United States why hasn't the Federal Government done a national study that determines whether or not there is health exposure linkage to environmental and hazardous wastes exposure.

The study that we did through the United Church of Christ in 1987—of course, that was a church civil rights agency that did that study. It helped spur the debate. It has been interesting to us to note that there has been a reluctance on the part of the Federal Government to go out and correlate the data that already exists. They have not had the political will. We hope that this is just not a matter of politics, but it should be a matter of policy and also a matter of law.

All Americans deserve to be treated fairly and equally and receive equal justice under the law. All environmental laws should be enforced equally. But we live in a society where racism is real, and one of the most insidious forms of racism is environmental racism because it consigns whole communities to higher birth defects, respiratory diseases and all forms of health maladies that could be averted.

So one of the things that we would not like to see, Mr. Chairman, is for another 4 years of processing. We think that this issue is of such importance that the Congress should act.

I think that—I agree with you Superfund should be reauthorized. We have some feelings about that, but we also believe this should be a freestanding bill entitled the Environmental Justice Act of 1993 and call upon the Congress to act urgently and swiftly. Every day we don't pass this legislation means children in Argyle Gardens or in Cancer Alley or in some of the Latino or Native American communities are going to be consigned to hardship.

We think that the Congress should act, and we think the Congress should act swiftly. On behalf of the Nation's oldest and largest civil rights organization, we enthusiastically and resolutely support the enactment of the Environmental Justice Act and commend the actions of Congresswoman Collins from Illinois and Congresswoman Collins from Michigan in their attempts to amend RCRA and Superfund respectively.

Mr. SWIFT. Thank you very much.

[The prepared statement of Mr. Chavis follows:]

STATEMENT OF BENJAMIN F. CHAVIS, JR., EXECUTIVE DIRECTOR AND CHIEF EXECUTIVE OFFICER OF THE NAACP

Good morning. I am Dr. Benjamin F. Chavis, Jr., the Executive Director and Chief Executive officer of the National Association for the Advancement of Colored People (NAACP). I am proud to represent the NAACP in support of Rep. John Lewis' s bill, H.R. 2105, The Environmental Justice Act of 1993. We commend Rep. Lewis for his efforts and commitment to ensure environmental protection. This bill represents a significant step forward in addressing the inequities that exist today with regard to nondiscriminatory compliance with environmental, health, and safety laws.

We also want to commend Rep. Cardiss Collins and Rep. Barbara-Rose Collins for their proposals, H.R. 1924 and H.R. 1925, which contribute to the sense of urgency for action to protect people of color, minorities and lower income people from toxic exposures.

Mr. Chairman, this legislation was introduced in the last Congress by then Senator Gore and Rep. Lewis. It has a broad base of support and virtually no opposition. A provision substantially similar to the Environmental Justice Act would have been included in the Department of Environmental Protection Cabinet legislation except for the desire on the part of the administration and key Members of Congress not to add substantive provisions to that bill. Major environmental groups, civil rights groups and labor groups support this legislation. In fact, Mr. Chairman, I have yet to see anyone, any business, any group or any organization—take a public stance against it. While you may hear some reservations about the legislation today, I hope in the testimony which I will give and the questions which you may have, I can put those reservations to rest.

Mr. Chairman, this is not just a problem of toxic dumps and waste disposal facilities. The Environmental Justice Act intends to address environmental toxics whether they are the by-products of economic activity intentionally or carelessly discarded into the environment; excessive workplace exposures; or the random distribution of toxics from man's everyday activities. The NAACP believes that the cumulative exposure to these toxics, particularly for people who live and work in less healthy environments, must be addressed and that is what the Environmental Justice Act intends to address.

Some will suggest that there is insufficient data on which to base the conclusion that there needs to be an investment to protect the health and welfare of minority and poor communities from toxic exposure. The Environmental Justice Act does not conclude that unhealthy exposures exist. It does require the resources and the information available to the Federal Government be quantified to determine whether and where excessive toxic exposures exist. Then, and only then, does the Environmental Justice Act require that steps be taken to alleviate those exposures.

It is increasingly clear and it has been well documented that race proved to be the most significant among variables tested in association with the location of commercial hazardous waste facilities and that three out of every five African Americans and Hispanic Americans lived in communities with uncontrolled toxic waste sites.

Mr. Chairman, prior to becoming Executive Director/CEO of the NAACP I was Executive Director of the United Church of Christ Commission on Racial Justice. When the report "Toxic Waste and Race in the United States: a National Report on Racial and Social Economic Characteristics of Communities with Hazardous Waste Sites" was published, that 1987 report was the first national study on the correlation of racial and social demographics with the location of hazardous waste facilities.

A subsequent study found that based on virtually all demographic factors that investment in and enforcement of environmental toxic cleanup activities was disproportionately low in minority communities compared to our wealthier neighbors.

I am quite pleased that awareness of these inequities has elevated environmental justice issues to the top of the national environmental agenda. I believe that this awareness will result in action in both the House and the Senate in this Congress. This bill and a companion bill introduced in the Senate by Senator Max Baucus, Chairman of the Environment and Public Works Committee, respond to the continuing struggle for basic survival and equality which is reflected in the increasing national demand for environmental justice. The pursuit of environmental justice is a paramount priority of the NAACP since it invokes principles of social justice and equal protection. Moreover, environmental hazards pose significant health risks for African Americans and others who are exposed to its toxic effects. Lead poisoning is a classic example of an environmental health problem that disproportionately affects African American children at every income level. Lead affects 3 to 4 million children in the United States, most of whom are African American and Latinos who live in urban areas. Among children 5 years and younger, the percentage of African American children who have excessive levels of lead in their blood far exceeds the percentage of whites at all income levels.

Mr. Chairman, I would be remiss if I did not place the Environmental Justice Act in the context of the national commitment to health care reform. The President and Mrs. Clinton have pointed to two major causes of skyrocketing health costs: guns and tobacco. They have, in the context of health care cost containment, endorsed gun control and programs to lessen the violence in our society. They have pointed to the use of tobacco as a major reason why our health care system is exhausted.

They have not pointed to the exposures to lead in the soil on the playgrounds in minority communities; to the exposure to toxics in the workplace environment; to the exposure to hazardous pollutants escaping from illegal dumps and industrial sites; to the exposure to toxic air pollution in our urban centers as major causes for skyrocketing health care costs.

That there is not the vivid evidence of mortality and morbidity that is associated with violence; that there is not the streams of data on disease and death associated with the use of tobacco, does not mean that there are not significant and reduceable health care costs associated with environmental exposure to toxic pollutants. These exposures are expensive. They reduce time on the job; they increase Medicaid; they slow productivity. I submit environmental toxic exposures in our minority community are an important and relevant consideration as we move to enactment of health care cost containment legislation.

The Environmental Justice Act intends to help to correct this aspect of the national need for health care reform, and I urge you to consider it in this context.

For these reasons, it is our strong belief that prompt passage of this landmark legislation is critical. At the same time that we highlight our support of this legislation, however, I must emphasize that the complexity, magnitude and crisis-character of environmental racism require redress on several levels and fronts at once. Thus, the disparate impact of environmental degradation on citizens of color throughout the Nation demand that significant additional approaches to this growing dilemma be taken immediately and simultaneously. Simply put, this legislation is not the entire sum and substance of the environmental justice agenda.

H.R. 2105 addresses the need to do a far better job of identifying the prevalence of life-threatening toxic wastes targeted to minority communiies. This is indeed an important objective. Beyond meeting this objective, we insist that other steps be taken to resolve the legitimate concerns of people-of-color communities in America. In these communities, the passage of this legislation alone will not eliminate the disproportionae presence of toxic generating, repository and/or disposal facilities and pollutants that produce increased incidents of infant mortality, birth defects, cancer and respiratory illnesses.

We need to do more: we need more money going to eliminating toxics in the environment; a much greater focus on public health protection; more community involvement; and more investment in health effects research.

It is extremely important for me to emphasize the present urgency of requiring a greater Federal role in protecting our communities from environmental health hazards. Too many lives in our community are at risk, and too much of our communities' economic interests stand in jeopardy to let the debate be controlled by empty slogans and demogoguery. In the final analysis, the ultimate challenge is to seek and be guided by approaches that will gain needed results.

And so today, we are gratified that the subcommittee is discussing this subject. We urge swift action on H.R. 2105 so that the mechanism to address environmental injustice broadly can be activated. Mr. Chairman, you may rest assured that the NAACP will mobilize its full membership in support of The Environmental Justice Act of 1993. Thank you.

Mr. SWIFT. Because you may have to leave I am going to recognize myself just for brief questions here.

Two points—in your written testimony you did a lot of talking about lead, which is a very important issue. I want you to know that we are prepared to move on that as soon as the Senate acts on the lead bill over there. We dealt with that in the last Congress and would like very much to do it again.

With regard to the Superfund and RCRA comprehensive bills—and that is something that you and I might want to chat about—I certainly understand and support the idea of comprehensive bills.

It is not within this committee's ability to provide that. There are four different committees with jurisdiction over that.

The question is, should we do what we can do on Superfund and on RCRA bills if they pass, or not? One strategic theory is, don't do anything until you can do it all. The theory there is you take away some of its strength if you do it piecemeal, or, you can get what you can as you go.

I don't know that we necessarily have to thrash that out here, but I would like to chat with you at some point about what we do when it is not within the power of this committee to pass the whole bill. Certainly, if that bill starts to move, we would do our part on it as quickly as we could. In the meantime, should we consider what we can do with regard to RCRA and Superfund?

Mr. CHAVIS. I would encourage you to let—I would like to see you lead the charge, that the issue of environmental justice ought to be incorporated in all of these pieces of legislation. In other words, when Superfund or RCRA are reauthorized, definitely the issues that we are raising here should be taken seriously.

But I want to emphasize that to reauthorize RCRA and to reauthorize Superfund and not to deal with these other issues that have also been raised comprehensively also would be viewed by NAACP as being inadequate. I understand the legislative process and would encourage this committee, as you have done with this hearing, to consider to pursue this course and to impact those things that are in the legislative hopper.

I understand that on the Senate side there is momentum picking up for the Environmental Justice Act of 1993. Then-Senator Gore was one of the original sponsors and now, as Vice President, I understand the White House will be announcing support of the Environmental Justice Act. My answer is to do both and—not either/or—support the work and the debate in the reauthorization of Superfund and the reauthorization of RCRA. At the same time, support the efforts of Members of Congress to enact a freestanding bill entitled the Environmental Justice Act of 1993.

Mr. SWIFT. Thank you very much.

Any further questions at this point?

Mr. Paxon, Reverend Chavis has to leave so we were doing questions here. We can either recognize you now——

Mr. PAXON. One quick one.

Dr. Chavis, thank you very much. You have recently released a thoughtful and provocative proposal regarding Superfund reform. You seem to have come to the conclusion that the current fundraising mechanism of retroactive joint and several liability does not serve your constituents here or address your concerns effectively. Granted for the time being that sites-specific liability was well-intentioned when Superfund was originally written, do you believe the Superfund liability scheme has become part of the environmental justice problem?

Mr. CHAVIS. Yes. Funding and liability are inextricably linked, and the reason why we put forth the eight-point program on reauthorization of Superfund was to get a greater consensus that something needs to be done. We all know that the past Superfund has not worked. Billions of dollars have been spent, but our communities have not been cleaned up, at least those communities that are on the Superfund list.

Again, I have a problem with the view being articulated that reauthorization of Superfund is going to solve environmental injustice. It is not. Reauthorizing Superfund will be a step to solving a much more massive problem, but I do believe that something needs to be done about retroactive liability. It has impeded, in our view, the kinds of expedited cleanup that should have taken place, and that is why we put forth an eight-point program.

Mr. PAXON. Thank you very much.

Mr. TOWNS [presiding]. Let me thank you for your testimony and the work you have been doing in this area for so many years. Maybe we are now beginning to listen. I hope so because you indicated a number of years ago that something had to be done. Maybe this is the year I hope.

Mr. TOWNS. Reverend Malone.

STATEMENT OF JAMES W. MALONE

Mr. MALONE. Thank you.

Members of the subcommittee and Mr. Chairman, I am appearing on behalf of the National Religious Partnership for the Environment and also for the U.S. Catholic Conference. I want to thank you for these hearings and environmental justice.

The National Religious Partnership includes four groups, the National Council of Churches of Christ, Consultation on the Environment and Jewish Life, the Evangelical Environmental Network and the U.S. Catholic Conference. This collaboration among major segments of the U.S. religious communities has been more than 2 years in the making. Our joint efforts have only begun, and my reflections today are in no way final conclusions of our work.

However, I do want to touch on three aspects of the challenge of environmental justice as we see it: (1) the ethical dimensions of the environmental crisis; (2) the linkage between environmental degradation and poverty and, conversely, the linkage between environmental quality and development; and then, (3) the need to build a broad base of personal and institutional commitment to action in behalf of environmental justice.

First, let me comment on the ethical dimension. In our common Judeo-Christian tradition, there are two sources for our ethical reflection, the Book of Scripture and the Book of Nature. Believers are convinced that God's wisdom and power are present in every aspect of creation and to destroy or to diminish creation is a moral failure.

In a special way we are also called to respond to the reality that it is the poor, the vulnerable, the victims of injustice and discrimination who most often are living with the consequences of environmental neglect and degradation both in our country and around the world.

In a world of limits, our ethical view is that the universal common good must serve as a foundation for a global environmental ethic. Market forces alone cannot ensure care for the environment and justice for the poor. The environmental crisis demands increased cooperation within our country and between nations. Society as a whole must help bear the burdens of those most directly harmed by environmental problems. Governments must share in the defense and preservation of our common resources such as the air, the oceans and the soil.

An ethic of the common good will require restraint and sacrifice. Overconsumption in the rich nations must be curtailed at the same time as those nations augment their assistance to the poorer ones. Only equitable and sustainable developments on a global basis offers a genuine hope for curtailing the destruction of our environment and for promoting social justice for the poor.

Let me turn my attention to poverty, the environment and development. The whole human race suffers as a result of environmental blight, and generations yet unborn will bear the price for our failure to act now.

It is especially the poor and the powerless who most directly bear the burden of current environmental carelessness. Their lands and their neighborhoods are more likely to be polluted or to host toxic waste dumps, their water to be undrinkable, their children to be harmed. Overcrowding and unfair land distribution often force the poor to overwork the soil, to destroy the forests and to migrate to marginal lands for survival. The efforts of the poor and the powerless to eke out a bare existence add to environmental degradation and often to disaster for themselves and for all others who are also poor.

We believe as part of the religious coalition that the religious community is particularly well-positioned to take the message of environmental justice to large and diverse communities for justice. After all, this is the center of our Judeo-Christian faith. This environmental issue defines as perhaps does no other single word the central vision of religious social teaching in our age. We in the church communities look at environmental policy from the bottom up, how it touches poor families and children. We know they suffer disproportionately from environmental degradation since our parishes and our congregations serve those very communities most affected by environmental problems. Thus, we view a concern for the environment not as a diversion from our justice agenda but as an extension of it.

Let me speak of current legislation. These bills before the subcommittee have a common ethical purpose. Namely, they seek to provide resources especially for poor people to assess, to remedy and if possible to prevent further environmental degradation to them and their communities. These low-income communities, especially African-American and Hispanic ones, are disproportionately threatened by environmental hazard. By focusing on the relationship between poverty, prejudice and the environment, these bills offer Congress the tunnel to move from words to action on environmental justice.

We in the environmental coalition will be offering a more detailed analysis of the bills and their strengths and weaknesses as the legislative process moves forward. We are convinced that these communities of poor people often lack the necessary political power and the economic resources to block environmentally hazardous activities which produce life-threatening and health-damaging effects. These African-American and Hispanic poor need governmental and private support to enable them to determine the location of existing contamination, to intervene when new waste facilities are proposed and to receive compensation for loss and injury.

In our opinion, any environmental justice legislation that is adopted must meet certain criteria. For example, it should distribute fairly the benefits and the costs. It should strengthen and support sustainable economic practices domestically and globally, and it should promote justice for the poor. It should engage the leadership in communities most affected by environmental problems.

While the issue of toxic waste as subject to the proposed legislation is paramount, the partnership concerns also encompass other environmental justice matters such as loss of jobs by workers in environmentally damaged industries, the exports of potentially damaging chemicals for agricultural use, reform of the U.S. foreign aid program to provide more assistance for sustainable development and to share appropriate technology to poorer countries, international cooperation in preserving the global resource base, biological diversity and decertification.

Some of the domestic problems may be within the capacity of the United States to solve. All are within the capacities of the international system to prevent, ameliorate or remedy.

A just and sustainable society and world are not simply ideals. They are a moral and practical necessity. Without an ecologically responsible world, justice will be unachievable. Our hope as a partnership is that today's hearing and the subsequent efforts to develop and pass legislation will help promote greater environmental justice.

Mr. TOWNS. Thank you very much.

[The prepared statement of Reverend Malone follows:]

STATEMENT OF THE MOST REVEREND JAMES MALONE, BISHOP OF YOUNGSTOWN, OHIO

Mr. Chairman, Members of the Subcommittee: On behalf of the National Religious Partnership for the Environment and the U.S. Catholic Conference, I want to thank you for these hearings on environmental justice. The National Religious Partnership includes the National Council of Churches of Christ, The Consultation on the Environment and Jewish Life (which involves major national organizations of American Judaism), the Evangelical Environmental Network (an association of evangelical Christian bodies), and the U.S. Catholic Conference. This collaboration among major segments of the U.S. religious community has been more than 2 years in the making.

On October 4, 1993, we formally announced plans for a 3-year common program across a broad spectrum of faith groups focused on environmental justice. We follow the leadership of members of communities which have borne the burdens of environmental injustice, who first and most clearly brought this concern to national attention and will continue to do so. For too long, environmental concerns have been treated separately from economic and social justice questions.

For our partnership, the environment is a matter of moral and religious importance. Our care for creation is a sign of our faith in the Creator. This faith calls us to examine how we use and share the goods of the earth, to ponder what we will pass on to future generations, and to seek justice for all of God's children.

Through our individual and collective efforts, we hope to add a constructive voice to the ecological dialogue already under way in our country and in the larger international community. Our joint efforts have only begun, and my reflections today are in no way final conclusions. Our hope is to contribute to the needed dialogue on how these matters of ecology and justice intersect. These issues are both complex and urgent. You will surely be hearing further from the Partnership and its member groups as these issues and our own activities evolve. We also urge you to make provisions to hear directly from those most affected by environmental problems. Too often that direct voice is not heard from sufficiently.

Today in response to your request I want to touch on three aspects of this pressing challenge: (1) the ethical dimensions of the environmental crisis; (2) the linkage between environmental degradation and poverty, i.e. between environment and development; and (3) the need to build a broad base of personal and institutional commitment to action for environmental justice.

Believers are convinced that God's wisdom and power are present in every aspect of the unfolding of creation (see Pv 8:2231). In the beginning, the Book of Genesis says, "God looked at everything he had made, and He found it very good" (Gn 1:31). The heavens and the earth, the sun and the moon, the earth and the sea, fish and birds, animals and humans—all are good. For believers the web of life is one and to destroy or diminish creation is a moral failure.

To mistreat the natural world is to abuse God's creation and to diminish our own dignity and sacredness. We believe that diversity of life manifests God's glory. Every creature shares in the divine beauty. The wonderful variety of the natural world invites our respect. Accordingly, it is appropriate that we treat other creatures and the natural world not just as means to human fulfillment, but also as God's creation, possessing independent value, and worthy of our respect and care. The virtue of temperance is reflected in the restraint we exercise toward natural things. By preserving natural environments, by protecting endangered species, by laboring to make human environments compatible with local ecology, by employing appropriate technology, and by carefully evaluating technological innovations as we adopt them, we show respect for creation and reverence for the Creator.

A shared Judeo-Christian ethic of responsibility arises not only from Scripture but also from our life together and our interaction with nature. This shared life obligates all of us to sustain and care for the common heritage of the earth.

We are also called to acknowledge and act on the reality that it is the poor, the vulnerable, the victims of injustice and discrimination who most often live with the consequences of environmental neglect and degradation. In a world of increasingly acknowledged limits, an ethic of the universal common good must serve as a foundation for a global environmental ethic. Our common concern for the environment we all share touches everyone; it heightens our sense of global interdependence and our responsibility to care for the earth, for our neighbor, and especially for the poor.

This means that society as a whole must help bear the burdens of those most directly harmed by environmental problems and that governments must share in the defense and preservation of the global commons such as the air, the oceans, and the soil. Market forces alone cannot ensure care for the environment and justice for the poor.

The solidarity called for by an ethic of the common good will require restraint and sacrifice. Overconsumption in the rich nations must be curtailed at the same time as those nations augment their assistance to the poorer ones. Only equitable and sustainable development on a global basis offers a genuine hope for curtailing the destruction of our environment and promoting social justice for the poor.

The whole human race suffers as a result of environmental blight, and generations yet unborn will bear the price for our failure to act now. But in most countries today, including our own, it is the poor and the powerless who most directly bear the burden of current environmental carelessness. Their lands and neighborhoods are more likely to be polluted or to host toxic waste dumps, their water to be undrinkable, their children to be harmed as they live and play in and around poisons. Too often the structure of sacrifice involved in environmental remedies seems to exact a higher price from the poor and from workers. Small farmers, industrial workers, lumberjacks, and watermen, for example, bear much of the weight of economic adjustment. Caught in a spiral of poverty and environmental degradation, poor people suffer acutely from the loss of soil fertility, increased exposure to agricultural chemicals, pollution of rivers, and the destruction of forest resources. Overcrowding and unfair land distribution often force them to overwork the soil, destroy the forests, and migrate to marginal land for survival. Their efforts to eke out a bare existence add to environmental degradation and often to disaster for themselves and for all who are also poor.

Sustainable economic policies must be put into effect. At the same time, the world economy must expand to include hundreds of millions of poor families who live at the edge of survival. Sustainable development is an imperative of justice and an environmental necessity.

A new spirit of responsibility for the earth is beginning. Although public concern is growing, the translation of environmental values into concrete personal action is not widespread. Some argue that cost, in time, money, and convenience, is a major factor; others blame the lack of awareness of environmental risks, inadequate information about alternatives, and the absence of normative pressure for change are also factors. In any case, Americans need to be instructed and encouraged to em-body environmental sentiments and convert them into practical action. Efforts are required to show them when and how to do this.

We believe that the religious community is particularly well-positioned to take the message of environmental justice to large and diverse communities in mainstream American society. Justice, after all, is at the center of our faith. We know this issue. We live it, pray about it, and some have died for it. It defines, as perhaps does no other single word, the central vision of religious social teaching in our age. We look at environmental policy from the "bottom up"; how it touches poor families and children. We know they suffer disproportionately from environmental degradation since parishes and congregations serve those very communities most affected by environmental problems. We see the consequences of environmental injustice in our rural parishes and urban hospitals, in ministries to migrant farmworkers and in outreach to our poorest neighborhoods. Thus, Environmental justice, comes to us naturally, as an opportunity to apply long-standing experience to a newlyarising need. We view an increasing concern for the environment not as a diversion from our Justice agenda, but as an extension of it.

Fundamental questions about environmental justice need to be asked of ourselves and other people of good will across this country: How do we frame a common and workable environmental ethic? What can we do to link commitment to justice and duties to the environment more firmly in the public mind? How can we recognize and confront the apparent conflict between environment and jobs? And how, in working for a sustainable global economy, do we fulfill our obligations in justice to the poor of developing countries?

These are matters of powerful urgency and major consequence. They constitute a call to conversion. As individuals, as institutions, as a people, we need a change of heart to preserve and protect the planet for our children and for generations yet unborn, without creating or perpetuating injustice for the disadvantaged today.

Today's crises in global ecology demand concerted and creative thought and effort on the part of all of us: scientists, political leaders, business people, workers, lawyers, farmers, communicators, and all citizens including those affected by environmental injustice. For ourselves, as religious teachers, we seek to lift up the moral and ethical dimensions of these issues.

The developing body of legislation now pending before Congress includes three bills of particular interest to this subcommittee and on which I have been asked to comment: The Environmental Equal Rights Act (H.R. 1924); The Environmental Health Equity Act (H.R. 1925); and The Environmental Justice Act (H.R. 2105).

These bills have a common ethical purpose—they seek to provide resources, especially to poor people, to assess, to remedy, and if possible, to prevent environmental damage to them and their communities. By focusing on the relationship between poverty, prejudice and the environment, these bills offer this Congress the opportunity to move from words to action on environmental justice.

We will be sharing a more detailed analysis of the bills and their strengths and weaknesses as the legislation moves forward.

Low-income communities, especially African American and Hispanic ones, are disproportionately threatened by air, water, and soil degradation, agricultural chemicals, and other hazards posed by landfills, incinerators, polluting industries, and toxic waste dumps.

These communities often lack the necessary political power and economic resources to block environmentally hazardous activities which produce life threatening and health damaging effects. They need governmental and private support to enable them to determine the location of existing contamination, to intervene when new waste facilities are proposed, and to receive compensation for loss and injury. Congress should move toward legislation which helps to provide the vital resources these poor communities so desperately need to address environmental injustice.

Any environmental justice legislation that is adopted must meet certain criteria:

—it should strengthen and support sustainable economic practices domestically and globally;

—it should distribute fairly the benefits and costs;

—it should promote justice for the poor; and

—it should engage the leadership of the communities most effected by environmental problems in developing public policy and programs.

Our partnership urges Congress to begin the process of ensuring the safety and protection of our most vulnerable citizens, poor and disadvantaged members of our society, who rarely have any one to speak for them and advocate on their behalf.

These bills also show the cause of environmental justice is moving from slogan to legislation, from the issue of the moment to long-term legislative commitment.

While the issue of toxic waste, the subject of the proposed legislation, is paramount, the Partnership's concerns also encompass other environmental justice matters. Our collective concern extends in particular to the loss of jobs by workers in environmentally damaging industries; the export of potentially damaging chemicals for agricultural use; reform of the United States' foreign aid program to provide more assistance for sustainable development and to share appropriate technology to poorer countries; international cooperation in preserving the global resource base; biological diversity; desertification; and other environmental problems. All of these problems stem from human interaction with the environment. Some of the domestic problems may be within the capacity of the United States to solve; all are within the capacity of the international system to prevent, ameliorate, or remedy.

A just and sustainable society and world are not simply ideals, they are a moral and practical necessity. Without an ecologically responsible world, justice will be unachievable. our hope is that today's hearing and the subsequent effort to develop and pass legislation will help promote greater environmental justice.

Mr. TOWNS. Ms. Johnson.

STATEMENT OF HAZEL JOHNSON

Ms. JOHNSON. I am from the southeast side of Chicago, and I want to explain to you what racism is all about or injustice.

The area where I live I call it a toxic donut. The reason is because we are sitting in the center of landfills, hazardous and solid, steel mills, incinerators, chemical companies, paint factories, one of the largest sewage treatment plants. We have four different types of odor that we have to encounter which is the gas odor.

There is a leaking—we have a foul odor like decomposed odors, of bodies. We have chemical odors and many more other types of odors that we encounter, especially during the summer months it is really unbearable in my community. When you get to my area you will know where you are because of the different kinds of odor that we bear.

I want to say that we have a health problem. My package that I presented to you shows that we do have a health problem within our communities. Like Dr. Chavis said, no Federal Government has come to my community to do a health study, and the reason for that I feel is because they don't want to know what they will find. They know there is a problem.

I think no one should have to bear the problems that we bear on the southeast sides of Chicago on a daily basis, 365 days a year.

The next thing that I am concerned is to have more community people input from the beginning of a decision that is made within that community, all throughout to the ending. A lot of times they bring us in in the beginning. Then when we hear from them depends on where they have made all the decisions that we have to hear. We want to be able to have our input in what is being said and done within our community.

A lot of people say that by us fighting against environmental problems there is no jobs. But there is a lot of jobs. We have a lead abatement program should be brought to communities like mine. There is a cleanup program. We could train people how to clean up these hazardous sites to give like in my community, and there are many more other jobs that is coming up within the environment with a need to train people within a community like mine for jobs because many of us in my community do not have jobs.

And the next thing that I am really concerned about is about the health problem. Many of my people are ill. They do not have insurance. They cannot even get medical care, and I don't think this is fair when these industries is making mega-bucks profit per year while victims like us suffer, cannot get medical care for their grief. I think that Congress needs to provide some kinds of medical care for people that live within a community as mine because the health problem that we have is not ours, it is from all these industries that is polluting the air. That is making the health problem that we have today.

And I would like to see something being done about the health problem that people like me encounter each and every day, because we have a lot of people have cancer. There is a young girl just last Monday passed, just 34 years old, had cancer. A girlfriend of my daughter, she is 45. She has kidney problems where she has to live on a kidney machine. We are looking for her to die at any time.

I don't think this is fair to people that have to go through all these changes. It is hurting. My husband died of lung cancer. I was left to raise seven kids by myself with no help. I had to work nights and parts of days, too, to make a living for myself and my children.

It is hard to see one of your loved ones die. My husband was a big guy. Within 10 weeks he was dead from cancer. Too many people in my community have died or have cancer, and I hope that you all will look into that and do something about the problem like my area.

They say that we are not on the Superfund list because it is not affecting our drinking water. What about the air that you are breathing? I feel that you are breathing that air 365 days a year. That is going into your bodies. I think that is just as important as drinking water. To me it is more important because sometimes I don't drink water but twice a day, but I am constantly breathing.

The Superfund list should be changed, and the air should also be just as important as the water because of the breathing condition. I have a breathing problem. So I ask that you all end all this racism that is going on within my community.

Right now, we are getting two transportation stations and another landfill which we don't need within our community. One of them, a transportation station, has 700 trucks per day running up and down our area. Our expressway is also one of the highest transportation areas in the Nation. We don't need any more. What can you do to help us keep from getting all this in our community, when we have over 506 sites that need to be cleaned up and we haven't had one of them to be cleaned up yet?

So I am asking what you can do to help stop so many facilities from coming in when we are already bombarded with too many now. Thank you.

Mr. SWIFT. Thank you very much.

[Attachments to the prepared statement of Ms. Johnson follow:]

PEOPLE FOR COMMUNITY RECOVERY—COMMUNITY HEALTH SURVEY RESULTS

Living in Algeld Gardens is hazardous to your health, according to the results of a recently completed health survey of over 800 residents of the far Southeast side Chicago Housing Authority development. The survey confirms what Altgeld Gardens residents have long reported about chronic breathing problems, troubled pregnancies and constant exposure to noxious odors.

According to Dr. Herbert White, Jr., M.D., M.P.H., the Regional Medical Director of Occupational and Environmental Medicine at St. James Hospital in Chicago Heights, the most disturbing finding of the survey is that more than 50 percent of 270 reported pregnancies results either in miscarriage, stillborn babies, premature births or babies who require special medical care due to birth defects or there were serious health problems.

The health survey represents a cooperative effort between People for Community Recovery (PCR), a community based organization in Altgeld Gardens, and volunteer public health experts from the University of Illinois School of Public health, who designed the survey. Training of volunteers was provided by the Clareitian Medical Clinic and the analysis was conducted by Dr. Robert Ginsburg, toxicologist. Dr. Herbert White, Director of Occupational and Environmental Medicine at St. James Hospital designed PCR's graph of the health survey.

During the early part of 1992, the trained surveyors knocked on the doors of 200 randomly selected apartments, located throughout Altgeld Gardens. Ultimately, the residents of 197 apartments, representing 835 people, were included in the survey. The residents were asked 27 specific yes-and-no questions, like "Have any women in your home been told by a doctor that they have asthma?"

"Our goal was to follow up on long-standing anecdotal evidence of health problems," said Hazel Johnson, the founder and current executive director of PCR. "What we now have through the survey are 835 individual accounts of the health risks of living in this community."

The survey results are no surprise to Johnson, who describes Altgeld Gardens as being in the center of a toxic doughnut. "We're surrounded by chemical plants, steel factories, incinerators, sewage treatment plants and landfills. People here are desperately in need of attention from public health officials and environmental regulators to help solve our problems."

In addition to heightened risks of troubled pregnancies, the survey also revealed a greater incidence of chronic obstructive pulmonary disease, which includes emphysema and/or chronic bronchitis. Thirty-two percent of men and 20 percent of women have asthma. Sixty-eight percent of those surveyed revealed they experienced health problems that disappeared when they left Altgeld Gardens. More than 37 percent of respondents cited noxious odor when asked to comment generally on their most common complaint.

For more information about the survey or People for Community Recovery, the first African American environmental community based organization in the Midwest, call Cheryl Johnson at (312) 468-1645.

PEOPLE FOR COMMUNITY RECOVERY—SOUTHEAST SIDE ENVIRONMENTAL INITIATIVE, ADOPTED SEPTEMBER 2, 1993

PCR decided to list the areas of greatest public concern and recommend that the region be treated as one Superfund site, given the extensive pollution problems which are interconnected. At a minimum the following sites should included:

Clean Up Sites:

1. Soil contamination in Altgeld Gardens and surrounding neighborhoods
2. Chemical Waste Management's Chicago Incinerator
3. Paxton Lagoons (Incomplete clean up by the State of Illinois)
4. US Drum.
5. Allied Corp.
6. Wisconsin Steel (Western site on 106th at Torrence Avenue)
7. Alburn Incinerator
8. US. Scrap
9. Inland Metals Refining
10. Penn Central
11. Avenue 0 and 118th Street
12. Cosden Oil & Chemical Co.
13. Cottage Grove Landfill
14. Estech General Chemical
15. Interlake Property
16. Land and Lakes #2 and #3
17. MSD #4 Sludge & Barrel Dumpsite
18. Paxton Landfill
19. L.H.L #2 Site
20. Pullman Factory

The public should be involved in establishing the standards and technologies that will form the basis for cleaning up the sites.

1. Prevention

—Prohibit the construction of new garbage and hazardous landfills, transfer stations, waste processing centers (i.e. RDF production plant, hazardous waste treatment plant, mixed waste sorting) and waste burning facilities on the Southeast Side of Chicago.

—Require all manufacturing facilities to implement toxic use reduction plans that meet community standards.

—Keep current hazardous waste incinerator closed; absolutely no PCB burning

—Make permanent the existing Chicago moratorium on new or expanded landfills.

2. Enforcement

—Create an independent program to spot check hazardous waste materials coming into the area.

—Curb illegal dumping by creating a community monitoring program that will train area's residents as inspectors to monitor the Calumet Industrial District. This should include installing "Environmental Security Booths" to reduce illegal dumping during the late hours. The sites listed below should be included but not limited to the following locations.

1. 122nd Torrence Avenue
2. 103rd at Stony Island
3. 115th at Cottage Grove
4. 130th at Greenwood

—Fines levied against polluters should go directly to the clean up of facilities and toward reinvestment in cleaner technologies.

3. Toxic Releases

—Require the Metropolitan Water Reclamation District's Calumet Plant to establish a toxic use reduction program that provides technical assistance to industrial dischargers.

Federal and State EPA should work with the following companies to help them modernize their facilities through the use of cleaner raw materials and production technologies

—Sherwin Williams Paint Company

—Ford Motor Company

—PMC Specialty

—Coke ovens from steel mills

4. Education/Public Outreach

—Require IEPA to report all findings of environmental testing conducted in Altgeld Gardens and their recommendations for cleaning up this area to PCR and Chicago State University's Calumet Environmental Resource Center.

—Provide adequate support to the Neighborhood Assistant Center of Chicago State University so that they are able to provide citizens with access to more technically oriented environmental reports and databases pertaining to the Southeast Side.

—Create an environmental educational center administered by local community groups to conduct outreach to citizens and businesses in the area (workshops, seminars, fact sheets and literature, etc.). Appoint PCR as the lead organization in this initiative and designate the Neighborhood Assistance Center of Chicago State University as technical facilitator of these activities.

—Create a public health program that includes preventive and screening components.

5. Economic Development:

—Establish an Organic Garden Center and Landscaping Service to serve the residents of Altgeld Gardens and the Southeast Side region that specializes in tree planting and care, general gardening, garden products, plants and seeds on a retail and wholesale basis.

—Establish an auto care center that will utilize environmentally sound techniques and products for auto repair, maintenance and cleaning. Services will include air conditioning servicing using freon recovery technology, antifreeze recovery, cleaning and detailing using biodegradable products and water conservation technologies.

—Establish a distributorship and retail outlet for environmentally friendly and energy efficiency products. Products will include non-toxic paints, varnishes and stains; nontoxic carpeting and floor coverings, compact fluorescent lighting, low flow plumbing fixtures and a variety of sealants, adhesives and caulks, etc.

—Plan and establish an industrial district that is dedicated to the establishment of industry that will manufacture a wide range of environmentally responsible products and utilize the safe raw materials and production technologies.

—Provide technical and financial assistance to help small and medium sized businesses implement toxic use reduction and recycling measures as an industrial retention strategy for the area.

—Give top priority and preference to minority contractors located in the geographic boundary of the Southeast Side to help in the implementation of this initiative.

—Establish the "Southeast Chicago Environmental Trust Fund" to allocate funds to community groups who would like to promote environmental projects in their environmental community groups and schools. (Divert fines levied against polluters into the SCETF).

—Establish on-going relationship with the Neighborhood Assistance Center of Chicago State University to facilitate strategic planning and to coordinate the application of faculty and student expertise of PCR's economic development agenda.

All economic activities should utilize the abundant labor pool in Altgeld Gardens and the Southeast Side region. A cornerstone of the economic development initiative should be job training for youth and adults as well as retraining for displaced workers. Technical and general assistance should be provided by Federal, State and local agencies such as the USEPA, IEPA, the Mayor's Office of Employment and Training, Illinois Department of Employment Security, the Department of Labor, Chicago Department of the Environment as well as other public and private sector organizations and agencies. Program specifics and details should be developed and disseminated on an ongoing basis with input from local citizens.

Natural/Historical/Cultural Preservation:

—The US. EPA should work with the National Park Service and State and city officials in preparing a plan to protect the natural areas and the historical and cultural landmarks of Southeast Chicago and to develop them for recreational and educational uses, along the lines suggested by the Calumet Ecological Park Association.

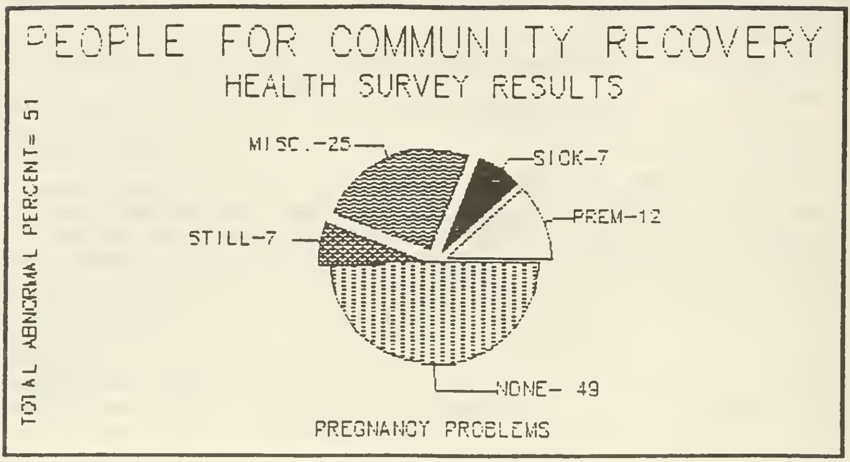
—Protection and development of these areas should be pursued with the following objectives:

1. Creating a variety of locations in Southeast Chicago that local residents with different interests can enjoy to their mutual benefit and satisfaction.
2. Improving the image of Southeast Chicago in the minds of local citizens, residents of other Chicago areas, and people from outside Chicago, with a view toward attracting more visitors and businesses to the area.
3. Creating jobs for local residents through the protection and use of these areas.

—The centerpiece of the natural areas protection and restoration program should be the Lake Calumet/Big Marsh area. Primary consideration should be given to the health of the people who fish in this area. A detailed analysis must be made of the hazards of consuming the fish, particularly carp and catfish, and the snapping turtles caught in these waters, and appropriate steps taken to protect the health of these people. Steps should also be taken to protect the bird and other wildlife that visits this area and to attract more. Plans should then be made to allow public access to this area while preserving its function as a wildlife refuge.

Other natural areas in Southeast Chicago should be identified and protected, particularly those along waterways connected to Lake Calumet, with a view to creating an extensive riverside trail system. Attention should also be paid to preserving the botanical wealth of key areas in and around Southeast Chicago. The Morton Arboretum should assist in this effort.

—Sites in Southeast Chicago of particularly historical or cultural significance should be identified and protected and/or restored. Efforts should be made to attract visitors to these sites. Links should be created between these landmarks and the Pullman Historic District.


PEOPLE FOR COMMUNITY RECOVERY
HEALTH SURVEY RESULTS
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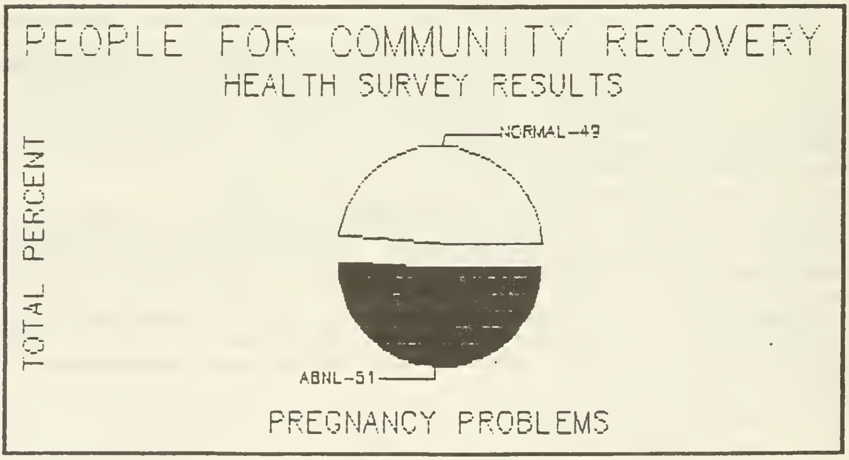
MISC.-25
SICK-7
PREM-12
STILL-7
NONE- 49
PREGNANCY PROBLEMS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HEALTH SURVEY RESULTS
TOTAL PERCENT
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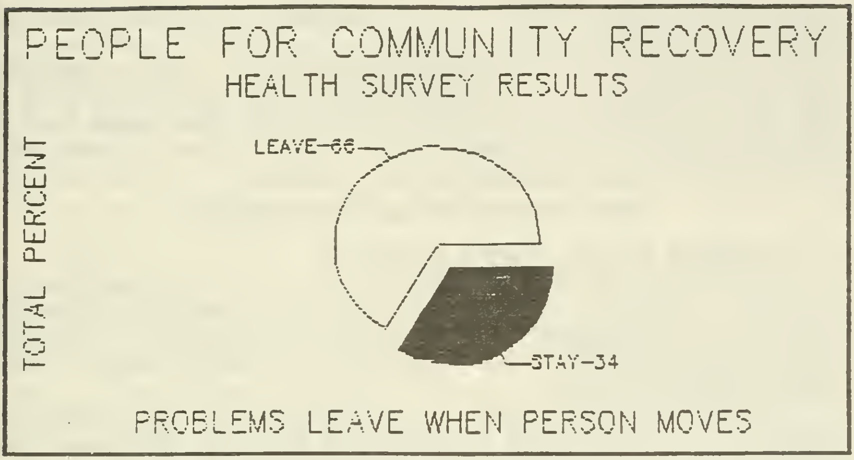
ABNL-51
PREGNANCY PROBLEMS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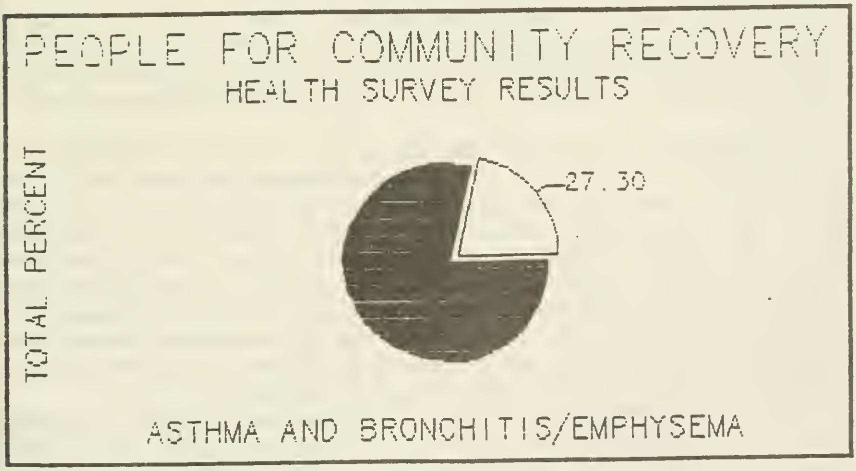
HEALTH SURVEY RESULTS
TOTAL PERCENT
LEAVE–66
STAY–34
PROBLEMS LEAVE WHEN PERSON MOVES


PEOPLE FOR COMMUNITY RECOVERY
HEALTH SURVEY RESULTS
TOTAL PERCENT
27.30
ASTHMA AND BRONCHITIS/EMPHYSEMA

Mr. SWIFT. I recognize now Deeohn Ferris, Director of the Environmental Justice Project for the Lawyers Committee for Civil Rights Under Law.

I think what we will do is take your testimony, and we probably will not be able to hear the next witness until after we go and do this vote. Forgive me for the interruption, but they insist that we go over and vote occasionally. So we will hear from you and come back and hear the last witness.

STATEMENT OF DEEOHN FERRIS

Ms. FERRIS. Thank you, Mr. Chairman.

I have had the luxury of submitting to you two statements, one of which is already in the record which focuses on an outline of a blueprint for actions that I think need to occur within the Federal Government to rectify some of these problems that you have heard about this morning.

This morning I gave to Jim a supplemental statement which focuses on the three pieces of legislation that you requested some opinion on. So—the third document which is appended to my first statement is a transition paper which I prepared, a collaborative effort on behalf of environmental justice activists which we submitted to EPA in December of 1992 and which also encompasses a blueprint of actions that grassroots people in this movement believe need to occur to remediate environmental racism.

I will focus my oral statement today on the three pieces of legislation that you requested that I review for you, H.R. 1924, H.R. 1925 and H.R. 2105. These bills represent necessary components of a comprehensive agenda to reform environmental programs in this Nation.

Legislative mandates are integral planks in the platform to redress existing disproportionate and discriminatory exposure to environmental hazards and to prevent these effects in the future. While we are grateful for actions undertaken by the executive branch to redress disparate environmental impact and while these actions are key, congressional directives which (a) impel the development of administrative, regulatory enforcement and research initiatives by the Federal Government and (b) prescribe judicial remedies for those harmed are essential to guaranteeing the right to equal protection from pollution for all Americans.

I firmly believe that, absent congressional action, executive branch initiatives and administrative improvements are insufficient to permanently address environmental injustices. For example, the September 1993, EPA appeals board decision in the Genesee township incinerator case is illustrative of the relying on the same discriminatory rationale used in the Warren county PCB landfill case in the early 1980's. In both cases, EPA denied petitioners ability to raise environmental justice issues, rejecting their claims for relief.

Together with enacting laws it is crucial to ensure that statutes instituting environmental justice are accompanied by the fiscal investment necessary to accomplish the mission. Therefore, beyond the bills presently pending in Congress and the particular problems that they redress there are at least two broader implementation issues.

First, a critical component of the process to develop effective environmental justice legislation is integrating the input of those most affected and most concerned by environmental hazards and as a result who are most knowledgeable about the impact of these hazards. Since resources to combat environmental injustices are severely limited in many communities experiencing disproportionate exposure, I believe that Congress should provide funding as well as opportunities for grassroots community activists to speak for themselves at hearings, meetings and other activities associated with legislative initiatives.

Second, to resolve difficulties associated with disproportionate environmental and human health impact and to achieve justice, Federal budgetary commitments must be commensurate with programs designed to remedy or prevent damage. Federal legislation to implement these programs should incorporate appropriations and authorizations at levels sufficient to ensure an efficient government-wide focus on the impact of Federal environmental programs. They should be sufficient to enhance interagency coordination and cooperation on developing solutions. They should enable agencies to timely accomplish specific congressional goals and eliminate adverse effects. And, finally, authorizations and appropriations must be sufficient to foster community participation in environmental decisionmaking.

I will turn first to H.R. 2105, the Environmental Justice Act of 1993, legislation which has been spearheaded by Dr. Chavis as well as Representative Lewis in the House and Senator Baucus in the Senate. The centerpieces of this bill are identification of environmental high-impact areas, a health impact study which would be conducted in environmental high-impact areas by the Department of Health and Human Services, and technical assistance grants for high-impact area communities.

These are commendable objectives. Identification of areas most adversely affected by toxic contaminants and pertinent health studies of area residents are essential ingredients and the sine qua non of any plan to provide relief to communities in distress. Requiring Federal agencies to assess contamination and health effects promotes data analysis and correlation and will provide urgently needed information on multiple, combination and cumulative exposures.

I would like to turn second to H.R. 1924, the Environmental Equal Rights Act of 1993. This bill essentially would permit citizens to petition EPA or the appropriate State agency in a federally delegated program to prevent siting of new or solid or hazardous waste management facilities when the facility would be sited in an already environmentally disadvantaged community. This bill, aimed at protecting communities of color and low-income communities with multiple pollution sources, is an important element of a comprehensive program to address disproportionate exposure.

Although waste facilities are only one set of sources which comprise the range of pollution hazards in communities of color and low-income communities, H.R. 1924 will provide a new tool with which to preserve the status quo. In other words, while the bill does not address problems caused by new or existing facilities and pollution sources except for waste management facilities and—nor does it apply to facility expansions, nevertheless, it is designated to prevent the deleterious consequences associated with siting new waste management facilities in areas already disadvantaged.

Finally, H.R. 1925, the Environmental Health Equity information Act of 1993, would amend the Superfund law to require the Agency for Toxic Substances and Disease Registry to collect and maintain information on race, gender, ethnic origin, income and educational levels of persons living in communities adjacent to toxic contamination. The increasing volume of existing data on disparate risk demonstrates a need to reinforce the government's obligation to protect all Americans from environmental hazards.

This bill represents a sound step in adding to the database on who is most affected and what are those associated effects.

My written supplemental statement contains some suggestions for improvements to these three pieces of legislation, and I will defer that discussion to your reading. Each of the bills discussed——

Mr. SWIFT. Excuse me. Why don't we interrupt right at that point? We will pick up with you when we come back.

Doctor Bullard, my apologies for the delay. I will come back as quickly as I can.

I would notice that the two youngest members of our audience are sound asleep. I suspect that none of us are going to compete with Disneyland or the Cookie Monster.

We stand in recess.

[Brief recess.]

Mr. SWIFT. The subcommittee will come back to order.

Ms. Ferris, my apologies for having to interrupt you. If I could just touch on one more piece of business before I recognize you?

Reverend Malone has other things to do. It is astonishing to me the number of people who do not spend their entire lives waiting to testify before Congress. We thank you very much for your participation. Of course, I think you should keep your schedule. Feel free to leave when you feel you need to to make those other commitments.

Mr. MALONE. Thank you, Mr. Chairman.

Mr. SWIFT. You are welcome. Ms. Ferris.

Ms. FERRIS. I was just about to conclude as we adjourned for your vote. Just a few more minutes and I will be out of your hair.

My conclusion is this: Each of the bills discussed in my supplemental statement represents a plank in the platform to provide equal environmental protection for all Americans. H.R. 1924, H.R. 1925, S. 25 and H.R. 2501 provide a progressive foundation upon which Congress can build reforms into environmental programs that will benefit people of color and low-income communities in particular and the rest of the American population in general.

Further, there are other examples of pending legislation such as Representative Cardin's lead abatement trust fund bill and Representative Conyers' EPA Cabinet status bill, provisions of which are intended to address pollution hazards which disproportionately affect people of color and the poor.

In addition to these bills, within the term of the 103rd Congress the authorization expires for nearly every environmental statute administered by EPA. These bills and each of these statutes presents a watershed opportunity for Congress to modify environmental programs and formulate new ones that will be responsive to the needs of those denied equal protection under law.

Fulfillment of the constitutional guarantee of equal protection and equal environmental protection can and should be the hallmark of the 103rd Congress.

Thank you.

Mr. SWIFT. Thank you very much.

[Testimony resumes on p. 209.]

[The prepared statement of Ms. Ferris follows:]

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TESTIMONY OF DEEOHN FERRIS

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ENVIRONMENTAL JUSTICE PROJECT

LAWYERS' COMMITTEE FOR CIVIL RIGHTS UNDER LAW

BEFORE THE

SUBCOMMITTEE ON TRANSPORTATION & HAZARDOUS MATERIALS

COMMITTEE ON ENERGY & COMMERCE

U. S. HOUSE OF REPRESENTATIVES

NOVEMBER 18, 1993

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to appear before you today to outline a framework for an effective federal approach to remedying the disproportionate effects of pollution on communities of color and low income communities in this nation.

The Lawyers' Committee for Civil Rights Under Law is a non-partisan, non-profit organization formed in 1963 at the request of President John F. Kennedy to involve the private bar in the provision of legal services to victims of racial discrimination. Through legal representation, public policy advocacy and public education on civil rights matters, we implement our mission. As Program Director of the Lawyers' Committee's Environmental Justice Project, I focus on devising interdisciplinary strategies and mechanisms to influence governmental and private sector decisionmakers concerning disproportionate environmental risks experienced by people of color and the poor.

The goal of the Environmental Justice Project is to strengthen community-based environmental justice activists in their efforts to prohibit environmental discrimination and develop remedies for the adverse consequences of prior discrimination. Our objective is to obtain equality by providing legal and technical resources for the needs of people of color, ensuring fair, equitable political participation and eliminating all barriers to equal environmental protection.

INTRODUCTION

The concept of environmental justice has emerged from the growing recognition that people of color and people with low incomes more often live and work in areas in the United States where environmental risks are high. People of color and people with low incomes are most often the unwilling recipients of hazardous waste sites, incinerators, industrial production facilities, pesticides and radiation exposure.[1] Furthermore, communities already adversely affected by disproportional pollution risks in the ambient environment may be inundated by indoor air pollution, caused by asbestos or lead-based paint, and occupational exposure in the workplace.

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[1] See e.g., "Transforming A Movement," Dana Alston, Race, Poverty and the Environment 1 (Fall 1991/Winter 1992).

"Black, Brown, Poor and Poisoned: Minority Grassroots Environmentalism and the Quest for Eco-Justice," 1 Kansas Journal of Law and Public Policy 68 (1991).

"Environmentalism and the Politics of Equity: Emerging Trends in the Black Community," Bullard and Wright, 12 Mid-American Review of Sociology 25 (1987).

Racial disparities in the treatment of pollution risks are verifiable. Increasingly, evidence produced by scholars, attorneys, scientists, journalists and citizens demonstrates that, even more important than income, race is the determining factor in terms of who is exposed to higher levels and multiple combinations of environmental contaminants.[2]

People of color and ethnic groups represented in communities experiencing elevated pollution risks cross the spectrum, including African Americans, Latinos, Asian Americans, Pacific-Islanders, and Native Americans.[3] In general, communities of color face pollution exposures at levels not regularly experienced by other segments of this society. Community-based organizations, academicians, attorneys, civil rights and environmental organizations, organized labor, health professionals and church groups are coalescing on these issues comprising elements of an omnibus campaign: the environmental justice movement.

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[2] See, e.g., Race and the Incident of Environmental Hazards, Bunyan Bryant and Paul Mohai (Westview Press, Boulder, Colorado, 1992).

Dumping in Dixie: Race, Class and Environmental Quality, Robert Bullard (Westview Press, Boulder, Colorado, 1990).

"Toward a Model of Environmental Discrimination." The Proceedings of the Michigan Conference on Race and the Incident of Environmental Hazards, Bunyan Bryant and Paul Mohai eds., (University of Michigan School of Natural Resources, Ann Arbor, Michigan).

"The Distribution of Air Pollution by Income and Race," Michel Gelobter (Paper Presented at the 2d Symposium on Social Science in Resource Management, Urbana, Illinois, June, 1988).

[3] See e.g., We Speak for Ourselves: Social Justice, Race and the Environment, Dana Alston, ed. (Panos Institute, September 1990).

EPA Journal: Environmental Protection - Has It Been Fair?, U.S. Environmental Protection Agency, Volume 18, Number 1, March/April 1992.

Disproportionate risks posed by pollutants occur in both rural and urban areas with statistically significant populations of people of color. For example, urban communities face elevated exposures associated with air, land and water pollution; migrant farmworkers (most often Latinos and African Americans) in rural communities frequently are overexposed to dangerous pesticides; and exposure to low-level and high-level radiation is endangering Native Americans on their lands.[4]

Documentation of environmental injustices experienced by people of color dates back two decades. Regional and nationwide studies, dating from 1967, show significant exposures for people of color compared to whites, to with noise, hazardous air pollutants, siting of commercial hazardous waste facilities, uncontrolled toxic waste, water pollution, pesticide poisoning, and location of solid waste landfills.[5] The federal government also documented inequities related to location of hazardous waste landfills in the South in a 1983 report by the U. S. General Accounting Office.[6]

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[4] See e.g., Environmental Racism: Reviewing the Evidence, Paul Mohai and Bunyan Bryant (Paper delivered at the University of Michigan Law School Symposium on Race, Poverty, and the Environment, January 1992).

Toxic Wastes and Race in the United States: A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste Sites, Commission for Racial Justice, United Church of Christ, New York, New York.

Natural Resources Issue: Race, Class and Environmental Regulation, University of Colorado Law Review, Volume 63, No. 4, 1992.

"Native Hawaiian Historical and Cultural Perspectives on Environmental Justice," Race, Poverty and the Environment, Volume III, No. 2 (Spring 1992).

[5] See e.g., The Environmental Justice Framework: A Strategy for Addressing Unequal Protection, Robert Bullard, Draft, Unpublished 1992.

Reviewing the Evidence, Ibid.

Raising public awareness and agitating for change in this tragic predicament, the multi-cultural, multi-racial coalition of environmental justice activists across the United States, hearkening to the civil rights movement, are part of a growing mass social justice movement that demands equal protection for all people, including equal protection from pollution.[7]

Activists in this movement are highlighting the need for additional empirical investigation and development of aggressive action plans at the federal and state levels, legislation, a new regulatory approach to redress the discriminatory distribution of environmental risks, and targeted federal environmental enforcement.[8]

Based on my background and experience with environmental issues, this testimony identifies impediments to achieving equal environmental protection under law in this nation and sets forth recommendations in five parts. These five parts are:

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[6] Report by the U.S. General Accounting Office, Siting of Hazardous Waste Landfills and Their Correlation With Racial and Economic Status of Surrounding Communities, GAO/RCED 83-168, June 1, 1983.

[7] We Speak for Ourselves, Ibid.

Activists are organizing from the bottom up creating community-based grassroots groups and regional networks to identify problems, and develop common strategies to create solutions. For example, grassroots groups and their invitees have participated in several landmark meetings and conferences: The First National People of Color Environmental Leadership Summit involved nearly 1000 activists from the United States, Africa and South America conferring in Washington, D.C. in October 1991; for the past three years, the Southwest Network for Environmental and Economic Justice has convened an annual gathering of activists representing ten states; over 2500 participants joined the Southern Community Labor Conference in December 1992 to discuss the concerns of grassroots groups representing a radius of 14 southern states.

[8] See generally "A Challenge To EPA," Deeohn Ferris, EPA Journal Volume 18, No. 1, U.S. Environmental Protection Agency, March/April 1992.

I. The U. S. Environmental Protection Agency and other federal agencies with jurisdiction over environmental laws and regulations must prioritize environmental programs to redress disproportionate pollution risks;

II. The U. S. Environmental Protection Agency and other federal agencies with jurisdiction over environmental laws and regulations must enforce laws and regulations in communities adversely affected by disproportionate pollution risks;

III. The federal government must create an inter-agency council to coordinate development of effective remedies to eradicate the impact of disproportionate exposure to environmental hazards;

IV. The U. S. Department of Justice and federal civil rights agencies should assume and active role in ensuring equal protection from pollution; and

V. The federal government must remove impediments to coordinating nationwide grassroots efforts to achieve environmental justice.

I. THE U. S. ENVIRONMENTAL PROTECTION AGENCY (EPA) AND OTHER FEDERAL AGENCIES WITH JURISDICTION OVER ENVIRONMENTAL LAWS AND REGULATIONS MUST PRIORITIZE ENVIRONMENTAL PROGRAMS TO REDRESS DISPROPORTIONATE POLLUTION RISKS

As in other areas of government activity and harmful private conduct, the federal government has an obligation to ensure equal protection from pollution under the law. The duty to aggressively redress discriminatory disproportionate pollution exposures derives from this obligation. To fulfill these duties, EPA and other federal agencies with jurisdiction over environmental laws and regulations must prioritize eliminating disproportionate impact and protecting the health and environment of those who are affected, i.e., communities of color in this nation.

Prioritizing disproportionate impact issues and protection of human health and the environment should center on improving programs in these areas as they affect communities of color. Integral aspects of improving these programs include identifying populations at risk, a targeted government-wide research and development agenda and restructuring federal activities regarding data reporting, data collection and analysis.

Protecting human health and the environment should be the principal federal priority. Commonly, however, cost-benefit analysis is the test applied in promulgating environmental regulations. In general, cost-benefit analysis provides an in-depth record of the price of regulation to industry but, reveals little information about either the toll of synergistic pollution or disproportionate risk on human health or the costs of failure to protect the environment. Emphasizing scrutiny during the regulatory development process on the health and environment of populations most exposed to environmental contamination will support development of regulations to protect communities of color, in particular, as well as the general population.

Technological advancement in the tools of environmental and human health measurement is a requisite component of this increased scrutiny. Revising risk measurement and monitoring systems, and improving the effectiveness of exposure data correlation to encompass synergistic effects, cumulative effects, multiple sources and sensitive populations are ingredients essential to ensuring quality of life for over-exposed communities. To catalyze this shift in the risk analysis agenda, the government could fund academic institutions historically associated with people of color and regional research institutes to focus on research responsive to achieving environmental justice goals.

Modifications to the federal framework for protecting human health and the environment also are mandatory. Foremost, federal initiatives must vigorously pursue as goals pollution prevention, waste minimization, reuse and recycling to reduce and, where possible, eliminate levels of potential disproportionate exposure. Furthermore, the framework must incorporate a pre-market strategy and, where feasible, post-market strategies for evaluating whether toxic and hazardous substances will enter (or continue in) the stream of commerce.

In addition to environmental justice, key elements of this evaluation framework should include assessments of the following characteristics: (1) multiple exposure pathways; (2) cumulative exposures; (3) health and environmental effects, including effects on sensitive populations such as nursing mothers, children and the elderly; (4) synergistic impact; (5) product safety; (6) need for the substance; (7) availability of less harmful substitutes and alternatives; (8) persistence and degradability; and (9) biocaccumulation factors.

Effectively, this evaluation matrix would shift the burden of proof. Instead of requiring affected communities to prove that exposure to a substance or substances causes adverse health and environmental effects, industries which profit from their manufacture would bear the burden of proving the safety of those products. Without reducing scientific rigor, shifting the burden of proof to industry adjusts the regulatory process to a presumption in favor of safety and protection.

Similarly, in terms of prospective siting decisions, such as those involving energy production, chemical manufacturing, and waste treatment storage and disposal, pertinent analyses must include an assessment of the health, environmental, economic and distributive impacts on the projected recipient community. A government that evaluates paperwork burden on industry, regulatory impact on small business and effects on endangered wildlife should do no less than scrutinize the impact on people.

Finally, prioritizing environmental programs must be based on protecting over-exposed and sensitive populations. For example, in December, 1992, the Environmental Justice Transition Group established a protocol for prioritizing EPA programs affecting people of color in a document entitled "Recommendations To The Presidential Transition Team for the U.S. Environmental Protection Agency on Environmental Justice Issues." This document is attached and, hereby, incorporated into the Subcommittee's hearing record.

Briefly, the Environmental Justice Transition Group recommends that work on issues affecting communities of color commence at EPA in eleven specific areas: (i) farmworker protection; (ii) protecting indigenous peoples; (iii) radiation exposure; (iv) waste facility siting and cleanup; (v) clean air; (vi) clean water; (vii) drinking water; (viii) urban areas; (ix) free trade and border issues; (x) strategic planning and budgets; and (xi) state program implementation.

Creation of a Federal Inter-Agency Coordinating Council on environmental justice issues would expedite similar program prioritization in other agencies with jurisdiction over federal environmental laws and regulations. This concept is described in more detail in Part III below.

II. THE U. S. ENVIRONMENTAL PROTECTION AGENCY (EPA) AND OTHER FEDERAL AGENCIES WITH JURISDICTION OVER ENVIRONMENTAL LAWS AND REGULATIONS MUST ENFORCE LAWS AND REGULATIONS IN COMMUNITIES ADVERSELY AFFECTED BY DISPROPORTIONATE POLLUTION RISKS

Federal action pursuant to environmental laws and regulations consistent with equal protection principles is key to achieving equal protection from environmental exposures. However (underscoring what environmental justice activists have known all along), a recent study by The National Law Journal, Unequal Protection: The Racial Divide in Environmental Law, Volume 15, No. 3 (September 2, 1992), revealed a failure to neutrally enforce environmental laws, with regard to ongoing activities which cause pollution, as well as past activities.

The alarming findings show disparities in environmental enforcement penalties in communities of color compared to whites. Inequalities in enforcement are likely to exacerbate health risks and mortality rates caused by environmental exposures in communities experiencing disproportional effects.

According to The National Law Journal, disparities in enforcement pertain across-the board to enforcement of federal air, water and waste statutes. For example, the report shows that penalties under the Resource Conservation and Recovery Act[9] are up to 500% higher in white communities than in communities of color (despite the overall absence of disparity between affluent and poor communities). The report also revealed disparities in the rate at which uncontrolled hazardous waste sites are listed on the Superfund[10] National Priority List and the pace and quality of cleanups conducted in people of color communities compared to white communities.

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[9] 42 U.S.C. §6901 et seq.

The evidence indicates that the federal government compliance and enforcement response in communities of color is unequal to compliance and enforcement activities in white communities. As stated by Dr. Robert Bullard, a noted sociologist and researcher on environmental justice issues, "Not only are people of color differentially impacted by....pollution, they can expect different treatment by the government."[11]

The need for an urgent federal response to correct these inequities is paramount. Federal agencies with jurisdiction over environmental issues directly affecting people of color are integrally involved in enforcement activities that have wide-ranging implications for affected communities. Therefore, the federal government is uniquely positioned to demonstrate leadership which will ensure that the Constitutional principle of equal protection is implemented in all aspects of federal sector enforcement activity.

Excluding criminal enforcement measures, two traditional enforcement approaches affecting people of color are civil judicial environmental cases and civil rights cases. In general, civil environmental cases involve commission of a statutorily defined unlawful act, a violation of regulations or permits; and civil rights cases involve violations of specific statutory mandates and legal protections. In these two areas, the federal government should undertake coordinated initiatives to vigorously pursue causes of action targeted at remedying disproportionate impact.

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[10] Comprehensive Environmental Response, Compensation and Liability Act, as amended 42 U.S.C. § 9601 et seq.

[11] The Environmental Justice Framework, Bullard, Ibid.

Progressive reorientation of federal compliance and enforcement programs would redress environmental problems in under-protected communities. Immediately coordinating targeted federal inspection and enforcement resources to alleviate discriminatory pollution exposures in communities of color will establish as a high government-wide priority development and implementation of solutions to remedy disparate environmental effects resulting from noncompliance.

In addition, establishing the applicability of civil rights laws and regulations to environmental governance, whether through reconsidering the applicability of current civil rights statutes, Executive Order or by statute, reinforces the principles of equal protection which are essential to achieving equitable implementation of federal environmental programs.

A concerted federal approach combining civil rights criterion and environmental protection goals would prohibit discrimination in federal programs, as well as all environmental programs receiving federal funds.

III. THE FEDERAL GOVERNMENT MUST CREATE AN INTER-AGENCY COUNCIL TO COORDINATE DEVELOPMENT OF EFFECTIVE REMEDIES TO ERADICATE THE IMPACT OF DISPROPORTIONATE EXPOSURE TO ENVIRONMENTAL HAZARDS

Environmental justice concerns affect every media area (i.e., land, air and water), as well as all federal regulatory, compliance and enforcement programs involving environmental issues. The list of federal entities with jurisdiction over some aspect of either ambient or indoor domestic environmental/health programs encompasses at least nine Departments including Energy, Defense, Interior, Health and Human Services, Agriculture, Housing and Urban Development, Transportation, Justice and Labor; and at least 6 agencies including EPA, the Occupational Safety and Health Administration, National Institutes of Health, National Institute of Environmental Health Sciences, Centers for Disease Control, and the Agency for Toxic Substances and Disease Registry.

In view of the pervasive impact of government on the environment, these and other agencies must incorporate into the federal decision-making process factors necessary to safeguard communities facing disproportional pollution exposures. A Federal Inter-Agency Coordinating Council should be established to facilitate an effective and comprehensive government-wide response to eliminating disproportionate risk, including regulatory development, targeted compliance and enforcement activities.

The Council's imperatives should be to threefold: First, to reinforce that the principles of equal environmental protection pertain to the entire scope of environmental issues; second, to undertake a comprehensive inter-agency evaluation of federal practices and policies that contribute to disparate impact on communities of color; and third, to galvanize equitable implementation of environmental programs.

The focus of the Council should incorporate ongoing dialogue on formulating solutions appropriate to under-protected communities, including meetings with environmental justice activists to assess current issues and efforts, identify problems, assemble data necessary to develop effective devices for addressing disproportionate exposures, and annually report on the status of communities facing high levels of exposure to pollution. Council agencies that have relationships with Native American Tribes should establish as a near-term goal, providing support and assistance to Tribes in developing and implementing effective environmental programs on Tribal lands and fully funding those programs.

Finally, to provide much-needed resources to communities in need, the Federal Inter-Agency Coordinating Council should evaluate the viability of a legislative scheme to redirect a portion of collected civil penalties and criminal fines from the United States Treasury to directly benefit those communities adversely affected by environmental violations that are the subject of those fines and penalties. For example, instead of reverting to the Treasury, these monies could be expended to furnish funds for economic development in depressed areas, job training, ongoing health assessments and medical follow-up or environmental restoration.

The evidence indicates that the problems associated with disproportionate impact are serious warranting expedited redress. Effective inter-agency coordination is crucial if government is to address the needs of communities facing a pattern of unequal protection under the law.

IV. THE U. S. DEPARTMENT OF JUSTICE AND FEDERAL CIVIL RIGHTS AGENCIES SHOULD ASSUME AN ACTIVE ROLE IN ENSURING EQUAL PROTECTION FROM POLLUTION

Presently, erosion of civil rights law in this country has created difficulties in terms of proving discrimination and racism in areas ranging from employment opportunities and education to housing and voting rights. Even in obvious situations there can be enormous difficulties of proof.

In the environmental context, the burden of proof has proven insurmountable. To date, racial discrimination, in terms of disproportionate environmental effects, virtually has never been established in a court of law. Faced with the most blatant facts and statistics, courts have refused to find racial discrimination.

Most cases involving claims of environmental discrimination relate to one of the most controversial and bitterly contested areas of environmental regulation -- waste facility siting decisions. Until recently, these siting claims have challenged governmental decisions pursuant to the equal protection or due process provisions in the Constitution or 42 U.S.C. § 1983, all requiring proof of intentional discrimination. Essentially, none of these cases have been successful due to this rigorous standard.

Nevertheless, a civil rights approach merged with traditional environmental enforcement initiatives should be intensively examined as an innovative means to providing remedies at law for communities faced with distribution inequities. As the lead civil rights enforcement arm of the government, this examination should be conducted by the Department of Justice in conjunction with other federal civil rights agencies. According to noted legal scholars, for example, Title IV of the Civil Rights Act presents a viable opportunity for redressing environmental discrimination.[12]

In addition to developing innovative means to provide remedies at law for communities facing immediate distribution inequities, the Department of Justice should coordinate with federal civil rights and environmental agencies to create a framework for future efforts in communities of color.

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[12] "Pursuing Environmental Justice: The Distributional Effects of Environmental Protection," Richard J. Lazarus, 87 Northwestern University Law Review, No. 3 (March 1993).

Working with environmental justice activists, the federal government can demonstrate leadership by developing legislative amendments that can be incorporated into existing statutes to eliminate disproportionate impact. For example, the Department could support enactment of a private cause of action against environmental discrimination.

Together with coordinating development of legislative initiatives targeted at ensuring equal environmental protection, the Department of Justice is uniquely situated to spearhead an assessment of the means by which federal mechanisms can be applied to overcome impediments posed by interpretations of Title VI and other civil rights laws in remedying disproportionate pollution risks experienced by communities of color.

V. THE FEDERAL GOVERNMENT MUST REMOVE IMPEDIMENTS TO COORDINATING NATIONWIDE GRASSROOTS EFFORTS TO ACHIEVE ENVIRONMENTAL JUSTICE

In addition to the absence of a comprehensive federal offensive on disproportionate environmental exposures, coordination of efforts by community-based grassroots activists to achieve environmental justice is impeded by several factors, foremost of which are: (a) the seemingly unlimited range of environmental concerns posed by disproportionate risk; (b) lack of resources, and (c) limited access to and responsiveness of public policy decisionmakers.

(a) The Range of Environmental Risk is Wide:

Communities of color hardest hit by environmental hazards represent the spectrum of people of color including Asian Americans, Native Hawaiians, Pacific-Islanders, African Americans, Native Americans and Latinos. Disproportional pollution experienced by people of color envelops air, land and water; for example, mobile sources and stationary facilities that emit air contaminants, publicly-owned wastewater treatment works, stormwater and combined sewer overflows, radioactive wastes, solid and hazardous waste, land laid waste due to forestry harvesting and energy production activities, lead and asbestos poisoning, occupational exposures, application of dangerous pesticides, contaminated drinking water, and toxic fish consumption.

As mentioned above, the environmental justice movement has spawned multi-cultural, multi-racial coalitions and organizational networks around the U. S. based on unanimity of resistance to categorization as a disposable segment of the population and agreement on an action agenda shared by people of color on eliminating disproportionate environmental exposures.

Recognizing that solutions to the range of problems as wide as those confronting this movement cannot be unilateral and are often complex to investigate, the government must respond with rigor, discipline and seriousness of purpose in order to redirect the way environmental protection mechanisms are implemented in this nation.

Coupled with the existence of nearly identical concerns confronted at state and local levels, environmental justice activists are inundated with issues to redress, hostile (or at a minimum, unresponsive) governments and, too often, resources available to the struggle for equal protection are too limited to compel meaningful government or private sector response.

(b) Lack of Resources Impedes Progress:

Due to often severe resource limitations, progress that could be accomplished by environmental justice activists is constrained to a pace far slower than desirable. Bona fide environmental protection encompasses equal protection from pollution for all people, as well as initiatives to remedy distributional inequities. However, these goals cannot be achieved without broad-based support and participation. Private sector and public energies and resources must be applied to give voice to under-protected people seeking to remedy disproportionate exposure to environmental hazards.

Government funding, similar to the Technical Assistance Grants (TAG) mechanism authorized by the Comprehensive Environmental Response, Compensation & Liability Act (Superfund), would facilitate community input and participation into the process to achieve environmental justice. Using a modified TAG model, communities could access funds sufficient to provide a meaningful role in development of public policy.

Developing public and private resources necessary to strengthen community-based organizations, including legal and technical support, is crucial to developing solutions compatible with restoring the health and productivity of these communities.

(c) Access To and Responsiveness of Public Policy Decisionmakers:

Related to difficulties associated with limited resources, are the problems of limited access to and responsiveness of public policy decisionmakers. Too often, populations affected by disproportional pollution are invisible either at federal, state and local levels.

Invisibility of affected people of color is attributable to a combination of factors: public policy discussions on environmental issues don't often meaningfully include people of color, tools to measure their risk do not exist, funding for the tools and mechanisms for their advocacy is nascent or nonexistent, and their efforts are often outweighed by comparatively unlimited resources of opposing industry and government.

Linkages between public policy decisionmakers and community-based organizations and their representatives are crucial. Congress and the federal government, as well as state and local government, must engender mechanisms to facilitate hearing from community people about what they identify as issues of concern, potential solutions and needed expertise to aid their struggle for equal protection under law.

CONCLUSION

The federal government must immediately undertake initiatives to remedy hazards posing disproportionate risks to the health and environment of people of color in the United States. Committed leadership in the federal sector is crucial to ensuring that communities of color no longer bear a disproportional share of our national pollution burden. In terms of alleviating discriminatory impact, a coordinated federal approach to environmental laws, compliance and enforcement activities is integral to focusing already limited resources into areas where they are most needed and most effective.

Mr. SWIFT. Dr. Bullard, thank you for your patience. Happy to recognize you.

STATEMENT OF ROBERT D. BULLARD

Mr. BULLARD. Thank you, Mr. Chairman.

I want to thank you for calling this hearing. After working on environmental policies, land use, the impacts on communities of color for more than 15 years, I am pleased to see environmental justice issues trickle up to Congress.

In my work as a sociologist, I studied, written about, travelled in communities that are struggling in a life and death situation. I have been to Hazel's community on the south side of Chicago. I have been to Alabama, which has the largest hazardous waste dump in the country. I have been to East Los Angeles; West Dallas; Houston, Tex.; the only major city that did not have zoning for the issue of environmental disparities when it comes to siting, documented as early as 1979.

In 1979, very few people understood, recognized or were willing to address environmental disparities. When it comes to siting of municipal landfills, incinerators for the enforcement of laws, when it comes to land use, zoning; today this is a new day.

Many communities all across this country have come to recognize that the current environmental protection paradigm, environmental protection apparatus is broken. They are broken and they need to be fixed. It is not about tinkering with risk analysis, risk assessment, risk management. It is about a new paradigm shift that emphasizes prevention and intervention.

The current paradigm institutionalizes unequal enforcement, trades human health for profit, places the burden of proof on the victims, not the polluting industry. It legitimates human exposure to harmful chemicals, pesticides, and hazardous substances, promotes risky technologies, exploits the vulnerability of politically disenfranchised communities, subsidizes ecological destruction, creates an industry around risk assessment and delays cleanup actions.

Most importantly, it fails to develop a comprehensive pollution prevention strategy as an overarching strategy. The mission of the Federal EPA was never designed to address policies and practices that resulted in unfair, unjust and regressive outcomes. It was not designed to do that.

We expect the Federal EPA to begin to address the whole question of unequal protection, disparate impact, regressive impact, environmental injustice and environmental racism. We have to reinvent the EPA.

The EPA is not likely to ask questions and conduct original research that asks the questions: What groups are most affected, why are they affected? What can be done to remedy the problem? How can the problem be prevented?

The EPA's 1992 report was not initiated out of some magnanimous gesture. It was initiated because of pressure and, yes, I use pressure for injunctive environmental activists, academicians, and civil rights leaders. The struggle for environmental protection and environmental justice did not magically appear overnight in the 1990's. Martin Luther King, in 1968, went to Memphis, Tennessee, on an environmental economic justice issue; got justice for garbage workers.

In this case almost all the workers in Memphis were African American, talking about pay, talking about work conditions, talking about basically human rights.

I took a few notes while the EPA representatives were talking and being in a professorial mode, I made a note. Environmental justice also includes work force diversity, work force diversity.

Now, the EPA has historically one of the worst records when it comes to work force diversity. I think it was ranked out of 52 agencies toward the bottom tier. Of the 200 plus Senior Executive Service employees at EPA, there is only one female. That is Clarice Gaylord, Dr. Gaylord. She has been there for some 15 years. That is scandalous.

You look at the assistant administrators that have come on board at the EPA. We have one African-American male. That is the same number, one, replacement under the Bush administration. That is not progress. That is status quo. There are some problems in finding African-American females for assistant administrators and regional administrators. There are 10 regions. To say having one Native American out of 10 regions is progress, that is not progress.

We have to begin to address institutionalized racism when it comes to employment, when it comes to enforcement of the laws, and when it comes to exacting compliance with these industries that pollute.

What is it about African-American, Latino, Native American communities, Asian-American communities, communities of color, working class communities, poor communities that make them great places for landfills, incinerators, toxic waste dumps, all kinds of locally unwanted land uses or LU-LU's, as we refer to them. What is it?

This is not just an EPA problem, although I know this committee deals with EPA. Why is it when the Department of Energy sends out a request for proposal for siting or doing a feasibility study for siting, monitoring retrievable storage facilities, MRS, as they want to call it, why is it of the 121 proposals that came in, 16 came from reservations of Native American lands. What is it about those that make them vulnerable to apply for these types of proposals?

Store nuclear waste for 50 years and take it out of the ground and see if it leaks. Economic vulnerability, lack of an economic infrastructure, lack of jobs, undereducation, underemployment, all factors that create the vulnerability for accepting risks that other people can vote with their feet and exit.

We talk about risk assessment. We talk about risk analysis. We have to understand that risk assessment is just one tool. There is another tool many group communities use. It is called common sense. You don't need a sophisticated EIS study to understand what is going on in Hazel Johnson's community on the south side of Chicago.

We cannot base our models on risk analysis and use whether or not a particular chemical or hazardous material is carcinogenic. We have to look at what are the toxic effects, the respiratory effects, the reproductive effects, the developmental effects. We cannot just use the model, epidemiological model that looks at the chemical of the month or the flavor of the month, single-focus chemical profiles. We have to look at cumulative effects and synergistic effects.

What is it that is going on in the south side of Chicago? What is going on in the lower Mississippi industrial corridor? Some people call it cancer alley—that is an 85-mile stretch from Baton Rouge to New Orleans and over 125 chemical plants, one-fourth of this Nation's petrochemicals produced in that corridor.

Communities have been in existence since right after slavery. Petrochemical companies set down on top of them. They have not been good neighbors. Neighbors do not poison each other.

What is going on? Some communities call in cancer alley what is going on in this toxic gumbo where you have the air, the water, the land, poison? You have communities that where you have lead paint on the wall in public housing, you have workers working in the plants where they have poison in plants. So we are talking about environmental justice. We also have to attach environmental and economic justice.

Look at the distribution of risk threats. We have to talk about disparities that create the potential for future risks. There are some people who say we cannot do anything about region 4 in 1993. The GAO said 3 out of 4 of the off-site waste landfills are located in predominantly black communities in 1983.

In 1993, 100 percent—2 out of 2—are located in predominantly African-American communities. In California where I live, 3 out of 3 of the hazardous waste facilities, commercial, are located in predominantly Latino communities.

We have to address the fact that environmental justice means more than just siting a facility. It also means the enforcement of existing laws. H.R. 1924, H.R. 1925, H.R. 2105 are excellent steps in the right direction to address the issue of unequal protection of disparate impact and elevated exposures of at-risk populations.

What do we call the areas, environmental high impact areas? Call them sensitive populations or at-risk communities? Whatever we call them, we are talking about people. We are talking about Americans who have a right and I underscore right to be protected, equal protection.

So I would think and hope that the environmental justice framework, paradigm for reinventing the EPA would incorporate a four-prong strategy. This strategy will need to pay close attention to the enforcement, the rigorous enforcement of existing laws and regulations that are on the books.

It is not left up to EPA whether or not it should enforce title VI of the Civil Rights Act. That is not EPA's prerogative. If it is the law, it should be enforced. It should not be left up to the whims of an administrator as in 1970. William Ruckelshaus basically said the environmental laws we have are not covered by civil rights laws.

During that 20-something-odd-year interim, we have had very little enforcement coming out of the Office of Civil Rights within EPA to address title VI and compliance. Just recently, EPA, the Office of Civil Rights, got involved in this issue. This issue has been around as long as this country has been around.

Health and Human Services, of course, which is a much larger Agency, has over 200 lawyers to address the whole issue of civil rights, enforcement, compliance, title VI. EPA only has a couple of lawyers.

In order to address civil rights issues within the Environmental Protection Agency, we have to do something about the focus of that office. The Office of Civil Rights, as well as the Office of Environmental Equity will have to work closely together in addressing this issue.

The executive order on environmental justice is a great step when and if it passes or if the President signs it. It is a good step. But I think for too long we have had to—when I say we, people of color have had to resort to executive orders to address issues that Congress dealt with some while back. We should not have to have an executive order that the President signs to address a law already on the books. Enforce the law. Enforce the Constitution.

New Federal legislation, of course, is needed. Just as the Fair Housing Act of 1968 was passed to address housing discrimination, the 1965 Voting Rights Act was passed to address discrimination in voting, the 1964 Equal Opportunity Act and employment, education, et cetera, we need a comprehensive environmental equal protection act that addresses all forms of discrimination, whether it is siting, whether it is data collection, or the lack of including demographic information in using environmental impact statements under NEPA.

We have to have legislation to address the unequal protection, the disparate impact, the regressive impact. I think ultimately we have to understand that environmental justice and particularly environmental racism cannot be reduced to a poverty thing. It cannot be reduced to socioeconomic status. This is not just about low-income people being poisoned.

An example is Texarkana on the Texas side, a black middle-class community of homeowners, 100 percent homeowners, built houses on top of a Superfund site, not knowingly. Their American dream has been turned into a nightmare. It took an act of Congress to get that community relocated.

The Federal EPA said they could stay and it could be cleaned up. It took Congress to act. Northwood Manor in Houston was not a ghetto, a poverty project. In 1979 when the city decided—and the county and State—to put a landfill in that community, suburban middle-class, 83 percent homeowners, 1978, and it passed, and people fought it and the first lawsuit to challenge environmental racism was filed in 1979, *Dean* v. *Southwestern New Age*.

In 1971, a similar attempt was made to put a landfill in that same community, and, that community happened to be predominantly white. It was in transition.

The question that we ask is what makes it different when the proposal is made to site landfills, incinerators, you name it, in white communities and they are already against on the grounds it will lower property values, create a public health nuisance, obstruct traffic, children threatened. The question is there should be only one set of rulings, one set of standards.

Finally, Mr. Chairman, members of the subcommittee, I think that environmental justice, equal protection, these issues will not go away. The bills that are in front of Congress today, these are the good steps, good first steps; and it is the right thing to do.

Thank you.

[The prepared statement of Mr. Bullard follows:]

STATEMENT OF ROBERT D. BULLARD

Chairman Swift and Members of the Subcommittee on Transportation and Hazardous Materials: I am a professor of sociology at the University of California, Riverside and visiting professor at the Center for Afro-American Studies at UCLA. In my work, I have observed, studied, and written about environmental justice and problems borne by communities of color for more than the past 14 years. Much of my research has shown clear links between environmental threats and racial and economic composition of surrounding communities. Many communities all across the United States have come to realize that the current environmental protection apparatus is broken and needs to be fixed.

The current environmental protection paradigm manages, regulates, and distributes risks. This paradigm also (1) institutionalizes unequal enforcement, (2) trades human health for profit, (3) places the burden of proof on the "victims" and not the polluting industry, (4) legitimates human exposure to harmful chemicals, pesticides, and hazardous substances, (5) promotes "risky" technologies, (6) exploits the vulnerability of economically and politically disenfranchised communities, (7) subsidizes ecological destruction, (8) creates an industry around risk assessment, (9) delays cleanup actions, and (10) fails to develop pollution prevention as the overarching and dominant strategy.

The mission of the Federal EPA was never designed to address environmental policies and practices that result in unfair, unjust, and regressive outcomes. Without some public input, however, EPA and other government agencies are not likely to ask the questions that go to the heart of environmental justice: What groups are most affected? Why are they affected? What can be done to remedy the problem? How can the problem be prevented? The EPA's 1992 Environmental Eguity: Reducing Risks for All Communities report and its Office of Environmental Equity were initiated only after prodding from people of color environmental justice leaders, activists, and academicians.

Struggles for equal environmental protection and environmental justice did not magically appear in the 1990's. Some communities have been engaged in life and death struggles for more than a decade. One of the earliest studies to document the racial dynamics involved in waste facility siting was conducted in Houston. The study was initiated as a result of a 1979 lawsuit that charged the City of Houston, the State of Texas, and Browning-Ferris Industries with environmental discrimination. The lawsuit, *Bean* v. *Southwestern Waste Management,* was the first of its kind to challenge environmental discrimination under 1964 civil rights laws.

From the 1920's to the late seventies, 100 percent of the city-owned municipal landfills and 75 percent of the city-owned garbage incinerators were located in predominately African American Houston neighborhoods. During this same time period, African Americans comprised only one-fourth of Houston's total population.

The city of Houston got out of the municipal waste disposal business in the 1970's. Private industry stepped in to fill this vacuum. The privately-owned waste disposal companies followed the pattern that had been established by the city. Three-fourths of the private sanitary landfills used to dispose of Houston's household garbage were located in mostly African American Houston neighborhoods.

The Houston case is not unique. The findings in Dumping in Dixie: Race, Class, and Environmental Quality show that African Americans in the South have borne a disparate burden in the siting of hazardous waste landfills and incinerators, lead smelters, petrochemical plants, and a host of other noxious facilities.

The Federal EPA has done little to address hazardous waste facility siting imbalances that were uncovered by the 1983 U.S. General Accounting Office (GAO) in Region IV—eight States in the South (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee). The 1983 GAO study discovered that 3 of the 4 off-site hazardous waste landfills in the region were located in predominately African American communities. African Americans made up about one-fifth of the population in EPA Region IV 1983 and 1993. In 1993, however, 100 percent of hazardous wastes disposed of in the region end up in facilities located in predominately African Americans communities.

This pattern also holds true in other regions. In Region VI, for example, threatened communities in Southeast Louisiana's petrochemical corridor (the 85-mile stretch along the Mississippi River from Baton Rouge to New Orleans) typify the industrial madness that has gone unchecked for too long. The corridor has been dubbed "Cancer Alley" by some local residents and environmentalists. As recent as September, 1993, the Louisiana Advisory Committee to the U.S. Commission on

Civil Rights reinforced what many people already knew: African American communities along the lower Mississippi River chemical corridor bear a disproportionate health and environmental burden from industrial pollution.

Health concerns raised by residents and grass-roots activists who live in small towns along the Mississippi River such as Alsen, St. Gabriel, Geismer, Morrisonville, and Lions (all of which are located in close proximity to polluting industries) have not been adequately addressed by local, State, and Federal agencies, including the Federal EPA. Many of these unincorporated communities were established by former slaves.

The case of West Dallas, TX (a mostly African American and Latino neighborhood) is another clear example of unequal protection. The lead contamination problem in West Dallas was documented by the Dallas Health Department as far back as 1969. A 1983 Federal study established that the local smelter was the source of elevated blood lead levels in children who lived in the neighborhood. A citizen lawsuit forced the lead issue into public debate. After operating for more than 50 years, the smelter was shut down by the City of Dallas under a zoning ordinance—the smelter never obtained the necessary use permits to operate in the residential area. Clean-up delays by the Federal EPA amounted to “waiting for a body count.” A superficial cleanup of the neighborhood was conducted in 1984.

The City of Dallas was not the only governmental body that was slow to act on behalf of the West Dallas residents. It took more than two decades for the EPA to initiate a comprehensive clean-up of the lead in the neighborhood. Clean-up activity began in the West Dallas site on January, 1992—nearly 20 years after the first published government report documented the problem. The Federal Government removed an estimated 30,000 to 40,000 cubic yards of lead-contaminated soil from several West Dallas sites, including school property and the yards of some private homes at the cost of $3-$4 million.

There is general agreement that institutionalized discrimination exists in many areas of public life in the United States, including education, employment, housing, voting, and a host of other arenas. The 1964 Civil Rights Act was passed to remedy discrimination based on race, color, and national origin. The Federal Fair Housing Act of 1968 and the 1988 Amendment were designed to promote open and fair housing. Similarly, the 1965 Voting Rights Act was passed to ensure equal access to the political process for all Americans.

It has been an uphill battle convincing government officials that environmental discrimination, unequal protection, and equity questions exist. Government has been slow to ask the questions of who gets help and who does not, who can afford help and who cannot, why some contaminated communities get studied while others get left off the research agenda, why industry poisons some communities and not others, why some contaminated communities get cleaned up while others are not, why some communities are protected and other are not protected, why unequal protection, unjust, unfair, and illegal policies and practices are allowed to go unpunished.

Although the EPA has been in busines for more than two decades, it has yet to address the problem of environmental racism. Racism influences local land use, enforcement of environmental regulations, industrial facility siting, and where people of color live, work, and play. Environmental racism is real. It is just as real as the racism found in the housing industry, educational institutions, employment arena, and judicial system. Environmental racism refers to any policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color. Environmental racism combines with public policies and industry practices to provide benefits for whites while shifting costs to people of color. Environmental racism is reinforced by government, legal, economic, and political institutions.

The EPA did not produce the national study on Toxic Wastes and Race. The 1987 study was written by the Commission for Racial Justice, a church-based civil rights organization. The Commission’s landmark study found race to be the single most important factor (i.e., more important than income, home ownership rate, and property values) in the location of abandoned toxic waste sites.

Environmental injustices are not limited to facility siting. Racial discrimination results in elevated exposure to environmental and health threats, differential enforcement of environmental laws, unfair zoning and land use practices, and unequal allocation of financial resources. Many of the Nation’s environmental policies distribute costs in a regressive pattern while providing disproportionate benefits for whites and individuals who fall at the upper end of the education and income scale.

Environmental inequities result from a host of variables including procedural (i.e., uniformity and fairness in which rules and regulations are applied), geographic (i.e., spatial location of communities, central cities, suburbs, rural areas, reservations, etc.), and sociological factors (i.e., race, class, political clout, organization, etc). These inequities can not be reduced to poverty. For example, race has been found to be independent of class in the distribution of air pollution, contaminated fish consumption, location of municipal landfill and incinerators, abandoned toxic waste dumps, cleanup of superfund sites, and lead poisoning in children.

Lead poisoning is a classic example of an environmental health problem that disproportionately impacts African American children at every class level. Lead affects between 3 to 4 million children in the United States—most of whom are African American and Latinos who live in urban areas. Among children 5 years old and younger, the percentage of African American children who have excessive levels of lead in their blood far exceeds the percentage of whites at all income levels. Even when income is held constant, African American children are two to three times more likely than their white counterparts to suffer from lead poisoning.

Virtually all of the studies of exposure to outdoor air pollution have found significant differences in exposure by income and race. African Americans and Latinos are more likely to live in areas with reduced air quality than are whites. The July 26, 1993 explosion in Richmond, California (a city of some 80,000 residents where African Americans and Latino Americans comprise a majority of the residents) typifies the national problem of communities that are at special risk from industrial pollution. General Chemical Corp., a company which has had repeated violations, was responsible for a ruptured railroad car that spewed an estimated 9,500 gallon of concentrated sulfuric acid into the air sending more than 22,000 people to the hospital. Residents who live near polluting industries need protection now and should not have to depend upon divine intervention, the luck of the prevailing winds, for protection.

A 1992 study by staff writers from the National Law Journal uncovered glaring inequities in the way the Federal EPA enforces its laws. The authors write:

There is a racial divide in the way the U.S. Government cleans up toxic waste sites and punishes polluters. White communities see faster action, better results and stiffer penalties than communities where blacks, Hispanics and other minorities live. This unequal protection often occurs whether the community is wealthy or poor.

People of color and whites do not have the same opportunities to "vote with their feet" and escape unhealthy physical environments. Communities that are located on the "wrong side of the tracks" are subjected to all kinds of environmental assaults. Chicago's Southside neighborhoods typify this pattern. Chicago is the Nation's third largest city and one of the most racially segregated cities in the country. Over 92 percent of the city's 1.1 million African American residents live in racially segregated areas.

Southside Chicago's Altgeld Gardens public housing project is encircled by municipal and hazardous waste landfills, toxic waste incinerators, grain elevators, sewer treatment facilities, smelters, steel mills, and a host of other polluting industries. Because of the physical location of Altgeld Gardens, Hazel Johnson (a community organizer in the neighborhood) has dubbed her community a toxic doughnut.

The Southeast side neighborhood is home to 150,000 residents (of whom 70 percent are African American and 11 percent are Latino). It also has 50 active or closed commercial hazardous waste landfills, 100 factories (including seven chemical plants and five steel mills), and 103 abandoned toxic waste dumps.

In 1990, New York City adopted a "Fair Share" legislative model designed to ensure that every borough and every community within each borough bear its fair share of noxious facilities. Public hearings have begun to address risk burdens in New York City's boroughs. Proceedings from a hearing on environmental disparities in the Bronx point to concerns raised by African Americans and Puerto Ricans who see their neighborhoods threatened by garbage transfer stations, salvage yards, and recycling centers.

The solution to unequal protection lies in the realm of environmental justice for all Americans. The environmental justice framework attempts to uncover the underlying assumptions that may contribute to and produce unequal protection. The question of environmental justice is not anchored in a debate about whether or not decisionmakers should tinker with risk management. The environmental justice framework rests on an ethical analysis of strategies to eliminate unfair, unjust, inequitable, and illegal practices and decisions. The framework seeks to prevent environmental threats before they occur.

The environmental justice framework (1) incorporates the principle of the "right" of all individuals to be protected from environmental degradation, (2) adopts a public health model of prevention (elimination of the threat before harm occurs) as the preferred strategy, (3) shifts the burden of proof to polluters/dischargers who do harm, discriminate, or who do not give equal protection to racial and ethnic minorities, and other "protected" classes, (4) allows disparate impact and statistical weight or "effect" standard, as opposed to "intent," to infer discrimination, and (5) redresses disproportionate impact through "targeted" action and resources.

A four-pronged environmental justice action strategy is suggested: (1) enforcement of existing laws and regulations, (2) an Executive Order on Environmental Justice, (3) new Federal legislative initiatives, and (4) State and local legislative initiatives.

(1) Enforcement of Existing laws and Regulations. First, the environmental justice framework demands that the current environmental and civil rights laws are vigorously enforced and in a nondiscriminatory way. Use Title VI of the Civil Rights Act to address environmental regulations, laws, and practices that have discriminatory effect.

(2) Executive Order on Environmental Justice. In an effort to address unequal protection and environmental discrimination, the Federal EPA in June, 1993 began drafting an "Executive Order on Environmental Justice" for guidance in implementing Title VI of the 1964 Civil Rights Act (which prohibits use of Federal funds in ways that have racially discriminatory effect) and National Environmental Policy Act (social and economic impacts). The Executive Order will need to have "teeth" and sufficient resources for its implementation. (3) New Federal Legislation. There can be little doubt that Federal action is needed to ensure that all Americans are protected. Legislation is needed that is needed to address public policies, land use decisions, and industry practices that discriminate (whether intended or unintended) against people of color communities.

A number of bills have been introduced into Congress that address some aspect of this complex problem. The "Environmental Justice Act of 1993" (H.R. 2105) is an important piece of legislation that would provide the Federal Government with the statistical documentation and ranking of the top 100 "environmental high impact areas" that warrant attention.

The "Environmental Equal Rights Act of 1993" (H.R. 1924) seeks to amend the Solid Waste Act and would prevent waste facilities from being built in "environmentally disadvantaged communities."

The "Environmental Health Equity Information Act of 1993", (H.R. 1925) seeks to amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA) to require the Agency for Toxic Substances and Disease Registry (ATSDR) to collect and maintain information on race, age, gender, ethnic origin, income level, and educational level of persons living in communities adjacent to toxic substance contamination.

All three of these bills would fill important "data gaps" and provide needed information for assessing the environmental and health impact on at-risk communities and vulnerable populations.

(4) State and Local Legislative Initiatives. Environmental justice concerns have begun to be addressed at the State level. States that receive Federal funds for carrying out federally-mandated environmental regulations need to be required to comply with title VI of the Civil Rights Act. Several southern States have enacted laws to address unequal protection. Arkansas (Siting Barriers, Act 1263) and Louisiana (More Citizen Participation, Act 767) were the first two States to pass environmental justice laws. Virginia (Study Waste in Minority Communities, House Joint Resolution 529) passed a legislative resolution on environmental justice. Several other States have pending legislation to address environmental disparities: California (Site Demographics, AB2212). Georgia (Environmental Justice Act HB-385), New York (Equitable Location, A-7140), North Carolina (Study Demographics, HB-1423), and South Carolina (Siting Moratorium, HB-3824).

Mr. SWIFT. Thank you very much.

The transition team's report urged—I am talking to Ms. Ferris at this point—a holistic approach, a comprehensive approach on environmental issues. I think it was common sense that that is ideally the best way to proceed. I am concerned a little bit, however, that we need to take a less comprehensive approach initially in order to get some progress rolling.

This is kind of a topic I was discussing with Dr. Chavis. Can you suggest where we should target our efforts to get the "best bang for the buck," on this issue, if, in fact, we cannot do it all at once?

Let me make the assumption we cannot do it all at once so you do not have to get in a position of agreeing or disagreeing with that.

I clearly know you would rather do the whole thing. If it has to be a somewhat less comprehensive approach, where should we go first? What are the key things that have to be done? Where do we get the most done at the outset?

Ms. FERRIS. That is sort of like the guy in the Old Testament who had to make the decision about cutting the baby in half, from my point of view. But, frankly, as the lead environmental protection agency in this Nation, I think it is appropriate to focus our first efforts on that agency to reorient the way environmental business is done from that perspective.

Even so, though, Mr. Chairman, there are, as you read in the transition paper, tremendous environmental impacts that occur as a result of the implementation of environmental programs on the part of other Federal agencies.

While we might find it more efficient to begin with a focus on EPA, certainly, there are implications we need to study with regard to what the Department of Defense is doing in terms of cleanup of those types of sites, the impact of base closures on communities of color, low-income communities in this Nation.

Certainly, we need to examine what is going on with the Department of Energy and the cleanup of its facilities that have spewed radioactive contamination around our Nation.

And if I could segregate the focus at the outset or initially, I would say those are the agencies upon which we need to really impose some scrutiny.

Nevertheless, once again, as you read, the Department of the Interior, the Department of Agriculture, the Department of Transportation in its decisions about building highways and freeways in our Nation, the Department of Housing and Urban Development with its impact on lead and lead abatement programs, Health and Human Services with its research focus and health programs, all these agencies form a skein in terms of the way environmental programs are implemented in this country and the impact on our communities.

If we can get beyond the efficiencies of focusing on, perhaps, the big three, we certainly do need to pursue some remedies in those other agencies as well.

Mr. SWIFT. That is very helpful. I don't mean to leave the impression that I think if we could get a start on something over here, we have solved the problem. But sometimes getting something done over here, which becomes the thing you point to when you want to talk to this group, or that agency, can be helpful, if you do not sell it as "the solution."

To the extent that in a Superfund context or a RCRA context we could start, I would be very interested in seeing that that does not come to be understood as "the solution." Now we have solved that problem. I think you can, by the kind of rhetoric with which you surround a partial or a beginning or an incremental approach leave an impression you have solved it or you are beginning, taking steps.

I have been sensitized this morning to, if we do that approach, how we will need to structure the rhetoric so people will understand that it is a beginning. Your specific suggestions on where to start within the Federal bureaucracy are also helpful.

A specific question about H.R. 2105. Some people have expressed concerns about the use of toxic chemicals loading as the threshold in that bill. They suggest that the bill should instead focus on actual exposures. Do you have any feelings about that? Do you think that that is a valid concern? Is there an appropriate alternative?

Ms. FERRIS. I think it is a valid concern. Perhaps we should redefine the concept of loadings to encompass both exposure by weight of chemical, perhaps tons, or some other volume measurement as well as the risk assessment issue.

Unfortunately, though, the way risk assessment business is done in this country does not really contemplate multiple exposures, cumulative exposures or synergistic effects.

In most of the communities that we discuss within the range of those disproportionately affected, what we are really talking about is multiple, cumulative, and synergism.

I think in designing the legislation, Representative Lewis and Dr. Chavis considered that the concept of loading should incorporate both toxicity as well as some volume or weight measurement; and if that is not immediately reflected in the legislation, it would be a welcome refinement.

Mr. SWIFT. We held a hearing yesterday on risk assessment. I think it was a very useful hearing. It was not designed so much to say risk assessment is good or bad, but rather to say here is a tool. Now you need to know what the tool can do. It is important to know what the tool cannot do. You need to know how to use the tool properly. We did not have any witnesses with the particular perspective that you raised, though we did when we touched on this issue tangentially in an earlier hearing. We are aware of that.

We may proceed with something on risk assessment. We very much would like to include the kinds of observations you have. I personally do not believe that because a tool can be misused it should be abandoned. But I think it is very important that you understand what you are doing with the tool and not use it in an improper way. So we may want to have some discussion on that.

Dr. Bullard.

Mr. BULLARD. Mr. Chairman, I think the emphasis is just that it is a tool. I think when we apply our assumptions in doing our risk assessment, I think the risk analysts must be aware that there are other assumptions that need to be brought to bear, particularly if we are talking about culturally, geographically sensitive populations.

When we talk about, for example, water quality standards for dioxin, and what the averages are that are used for average fish consumption to apply that to compute the numbers for water quality standards, the average fish consumer weighs 160 pounds, 5 foot 10, white, male who consumes X grams of fish. This underprotects, using that assumption, underprotects people who live in geographical areas such as the South who may eat a large quantity of catfish, Native Americans who consume large quantities of fish period, or Asian-Americans who consume not only large quantities of fish but also the entire fish.

I think we have to be sensitive to the fact that when we use the tool, we do not somehow apply it in such a rigid format that it really takes away from protecting those populations. That is why I think the loadings have to make those adjustments for the multiple cumulative and synergistic exposure Ms. Ferris talked about.

Mr. SWIFT. It is very interesting that everyone seems to be a little paranoid about risk assessment. The people particularly interested last time were afraid it might be used in ways that make things too stringent. What they were asking for, which does not seem inconsistent with your proposal, when the risk assessment is made, they use the term "transparent".

You should know how the scientific and other judgments are made, how they were based, so that then relative laymen like myself can understand how the experts arrive at a given number and we can use it in policy development in the way we choose.

I find it an interesting hearing. I want to be sure the kinds of concerns that your community has are included in whatever consideration we give. We will reach out to you on that if we decide to move in that area.

Good science was where I was heading when we got off on that. Everybody seems to agree the EPA should use good science in assessing risks in communities, and that effort to address environmental justice focuses on actual exposure not on perceived risks.

Can you comment on that for me?

Ms. FERRIS. Well, I don't know if I can give you a definitive response to the question, but I will try another avenue.

Mr. SWIFT. Sure.

Ms. FERRIS. That is in many cases. The government considers that the absence of information means the absence of effects. That is not true. Particularly because we are not really examining what is going on in communities of color and other communities that are disproportionately affected. We cannot possibly be aware of what the results of these types of exposures are.

I think good science incorporates studies of end points other than cancer, because along with cancer in many of these communities, you find, as Dr. Bullard articulated, endocrinal abnormalities, respiratory ailments, rashes, other organ failure events in very, very high numbers.

We have got to begin to make—do what we can to make some nexus between what people are being exposed to and what is actually occurring health-wise without marginalizing those effects by attempting to attribute them to nutrition or smoking or some other deleterious activity.

While those activities may have some impact and some important impact in terms of what health effects people are experiencing, certainly we are advanced enough in scientific measurement to begin to segregate those effects and begin to attribute to what each is responsible for, chemical exposure, nutrition, cigarettes, whatever.

Is that helpful?

Mr. SWIFT. That is helpful.

Dr. Bullard?

Mr. BULLARD. Mr. Chairman, if I may, I think I am for good science. But I think we have to understand that having the science and having scientific documentation and proof, these are not prerequisite for action.

I give you an example of west Dallas, Tex.; a clear example where the science, the studies were done as early as 1969. EPA and CDC did a study in 1983. 1984 documents this lead smelter was causing tremendous health problems to children; not potential risk, not perceived risk, but causing damage to children that lived next door who lived in a public housing project and the entire community of west Dallas, mostly an African-American, Latino community.

Superficial cleanup was done in 1984. The EPA administrator at the time said you don't have to clean up this community because it is just poor people who live in the projects. Now the science was there. The science was there as early as 1969. It was not until 1993 that the EPA began a comprehensive cleanup. So the people in west Dallas are saying why should it take, even with the science, even with the documentation, why should it take 20 years to get cleaned?

The only answer you can give is that something is going on that has nothing to do with science. Even when you look at the fact that this particular smelter operated in west Dallas for some 50 years and it was not closed because of health concerns, not because of the study, it was closed because the smelter did not have the necessary use permits to operate. It had been operating in violation of Dallas' zoning ordnance for 50 years.

Now, here is a clear case where laws are on the books in terms of zoning ordinances, not enforced, not enforced because this was a black community, Latino community and a poor community. EPA basically ran away.

Now, having the science behind you doesn't mean you can get action. The lead studies is another clear example, the national studies. You have all kinds of studies, but the idea is—the argument—and it is an artificial argument—is it housing or health? If we abate lead in housing, in cities, you create a problem of homelessness because we will abate the property and the price of the housing. The rents will go up beyond what people can afford and we will throw people out. The answer right now is to do nothing, is to have children poisoned.

I think it is really abominable to have on the books, houses mandated for inspection for termites, which is a property value, economic issue, but not for health. That, to me, is unjust, unfair, and it needs to be addressed by Congress.

Mr. SWIFT. I also wonder if part of this isn't the old not-in-my-back-yard syndrome. What that means is sometimes people can be irrational. Everybody wants to create waste, but nobody wants to have the place you put it next to them.

Is part of this that the people can bring to bear concerns about perceptions that may not be rational in the context in which you are asking, in which you are pleading for environmental justice, the conclusion of which is they just do not want you to play the not-in-my-back-yard game?

It seems to me you ought to have the right to be as irrational as everybody else in terms of raising objections and then presumably, you try to make all those decisions more rational for everybody, bring more science, and so forth. What I am hearing you say is because of the lack of political clout, other things like that, you cannot protect your backyard in the same way others do for whatever reason they chose to do so. Is that correct?

Mr. BULLARD. What I am saying, what most studies document, there is a direct correlation between exclusionary zoning and practices that have been used to create differentiation within urban centers, whether it is basically zoning in the area, industrial, somehow getting variances, residential and getting variances to create the mixed use, et cetera.

What we found is that not in my back yard oftentimes, and as I found this in Houston, NIMBY organizations that operate in white communities have driven the locally unwanted land uses to the path of least resistance. Historically that has been predominantly black communities.

Actually the policy put in place, I label that PIBBY, "place in black's back yard," is not that we are saying environmental justice means placing every landfill in a black community in a white community. That is not environmental justice. That is craziness. That is madness. What we are saying is no community should have to bear a disproportionate burden of pollution; that no community should have to become a sacrifice zone.

All of us produce waste. All of us produce garbage. But all of us do not have to live next to garbage dumps, incinerators, landfills, et cetera, all of us produce hazardous waste. All of us do not live next to hazardous waste treatment storage facilities.

Mr. SWIFT. Well, I thank you very much, all the members of the panel. I think as we proceed, we will no doubt need to be in touch with you and work with you as we try to resolve some of these problems to see if we can get something done.

Ms. FERRIS. Thank you.

Mr. BULLARD. Thank you, Mr. Chairman.

Mr. SWIFT. Our last panel includes Sharon Harrington, Paul Murray, Barry Hill, and Mr. Charles McDermott.

Thank you very much. As you know, your prepared statements have already been made part of the record. You may proceed with your summary.

STATEMENTS OF SHARON HARRINGTON, ATTORNEY, LOUISIANA OFFICE, SIERRA CLUB LEGAL DEFENSE FUND; BARRY E. HILL, ATTORNEY, ON BEHALF OF STANDING COMMITTEE ON ENVIRONMENTAL LAW, AMERICAN BAR ASSOCIATION; PAUL MURRAY, ENVIRONMENTAL MANAGER, HERMAN MILLER, INC., ON BEHALF OF NATIONAL ASSOCIATION OF MANUFACTURERS; AND CHARLES J. McDERMOTT, DIRECTOR, GOVERNMENT AFFAIRS, WMX TECHNOLOGIES, INC.

Ms. HARRINGTON. Thank you, Mr. Chairman, for holding this critical hearing on environmental justice and recognizing the clear links between environmental rights and human and civil rights in this country. I am Sharon Harrington, an attorney with the Louisiana Office of the Sierra Club Legal Defense Fund.

My organization is a nonprofit environmental law firm with over 200 plus clients that range from small local citizen groups to organizations with national and international membership numbering in the millions.

We recognize that the subcommittee is well aware of the studies and anecdotal evidence establishing the hazards posed by pollution and hazardous wastes in this country are disproportionately borne by communities of color and the poor.

The location of hazardous waste treatment facilities in communities of color is troubling to us. These facilities are subject to special regulation precisely because the materials they handle pose chronic and acute health threats. The same releases can also contaminate the soil, ground water, surface water, threatening the health of the citizens long after the facility is closed.

In addition to these impacts, however, hazardous waste facilities can have significant socioeconomic impacts on the host community. For example, they can contribute to the breakdown of the community structure and negatively affect domestic, educational and employment stability as well as the community cohesion and property values.

Although RCRA facilities are sometimes touted as economic development vehicles for depressed communities, a large hazardous waste dump also imposes infrastructure costs on the entire community. The hazardous materials sent to the dump must travel in communities, highways, railroads and so routinely uses resources and poses dangers beyond the boundaries of the facility itself.

At present, the applicable environmental laws such as RCRA simply do not take into account social, economic, and cumulative effects of multiple sitings in an area. Rather siting a hazardous waste facility is treated as a technical check list of engineering and geological factors.

This leaves citizens with no enforceable means of having discriminatory social impacts taken into account in the deciding process for a future hazardous waste facility. Furthermore, existing civil rights laws are not geared to addressing discriminatory siting and even require proof of intentional discrimination.

The problem with this traditional approach is that it focuses unnecessarily on the overriding motivation behind the siting decision rather than the consequences. The consequences of these distributions, however, as a practical matter are most important to citizens.

Two matters currently being handled by our Louisiana office show the difficulty citizens face in making State agencies take discriminatory siting into account. In one case, we have been representing a group of African-American citizens of Noxubee County, Miss.

The non-white population of Mississippi as a whole is approximately 35 percent of its total population. Noxubee County by contrast is approximately 68 percent non-white. The poverty rate in Noxubee County is extremely high. Employment runs as high as 12 percent.

The economic base of Noxubee County and the surrounding region is primarily timber, farming; and as a result, the area produces very little hazardous waste. Nonetheless, there are proposals to site two hazardous waste landfills and hazardous waste incinerators in Noxubee County despite the obvious potential for negative impacts to the county and its citizens.

The siting regime now in place will allow both of these facilities to be sited with little if any consideration for these impacts. To attempt to get these impacts taken into account in the siting process, we have been forced to turn to title VI of the Civil Rights Act of 1964 which forbids discrimination in the administration of programs using Federal funding.

The Mississippi Hazardous Waste Permitting Program, which derives the majority of its funds from Federal resources, is doing just that by failing to consider the social and economic consequences of the hazardous waste facility sitings.

Consequently, we filed an administrative complaint with the U.S. Commission of Civil Rights and the EPA's Office of Civil Rights seeking to have Mississippi's program reformed. We are handling a similar administrative complaint under Title VI involving the siting of a hazardous waste facility in the Carrville/St. Gabriel area, an unincorporated mostly African-American community in Iberville parish, La.

Like the Mississippi DEQ or Department of Environmental Quality, the Louisiana State program treated the permit process as essentially a check list and made a commitment to issue a RCRA permit to the facilities. It failed to provide citizens with adequate process and to adequately take into account cumulative risks, discriminatory impacts and socioeconomic impacts.

Title VI is a useful statute for citizens and we fully expect to win these title VI cases. The point, however, is that citizens should not be forced to go through a roundabout, piecemeal, expensive process of reforming environmental laws on a case-by-case basis. Environmental law should provide a mechanism by which discrimination is avoided in the first place. For systemic problems, systemic solutions are required.

The Environmental Equal Rights Act is a major step toward providing citizens with these enforceable rights against discriminatory siting. It establishes an important forum and an equitable process for examining information on the potential impacts of facility sitings.

We believe the provisions are good, but they need some changes to address the sort of problems that citizens actually face. In order for the environmental equal rights to adequately address environmental racism and disparate impacts, it must also consider a significant component of adverse effects. That is social and economic impacts and cumulative risks addressed earlier in my testimony.

The Environmental Justice Act and the Environmental Health Equity Information Act are also crucial pieces of legislation which we fully support. We have submitted more detailed written testimony with suggestions for modifications of the Environmental Equal Rights Act and the Environmental Justice Act. We welcome the opportunity to work with this committee in passing these bills and establishing a workable framework for addressing environmental justice in this country. Thank you.

[The prepared statement of Ms. Harrington follows:]

STATEMENT OF SHARON CARR HARRINGTON, SIERRA CLUB LEGAL DEFENSE FUND

This testimony is submitted on behalf of the Sierra Club Legal Defense Fund (SCLDF), a non-profit environmental law firm that has served the Nation's environmental community since 1972. SCLDF's 200+ clients range from small, local citizens' groups to organizations with national and international memberships numbering in the millions. Our lawyers—working out of eight regional offices throughout the United States—represent a number of grassroots organizations that are vitally concerned about environmental racism and its devastating effects on communities of color and the poor.

We recognize that the subcommittee is well aware of the studies and anecdotal evidence establishing that the hazards posed by pollution and hazardous waste in the United States are disproportionately borne by people of color and the poor. See Environmental Racism: The Causes, Consequences, and Commendations, 5 tulane Env'tl L.J. 153 (1991); U.S. General Accounting Office, Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities, GAO/RCED-83-168 (June 1, 1983); Commission for Racial Justice, United Church of Christ, Toxic Wastes and Race in the United States: A National Report on the Racial and Socio-Economic Characteristics of Communities Surrounding Hazardous Waste Sites (1987); J. Gould, Quality of Life in American Neighborhood, Levels of Affluence, Toxic Waste, and Cancer Mortality in Residential Zip Code Areas, 29 (A. Marlin ed., 1986); P. Mohai & B. Bryant, Environmental Racism: Reviewing the Evidence, in Race and the Incidence of Environmental Hazards: A Time for Discourse (1992); R. Bullard & B. Wright, The Quest for Environmental Equity: Mobilizing the African-American Community for Social Change, 3 Soc'y & Nat. Resources (1990); M. Lavelle & M. Coyle, Unequal Protection: The Racial Divide in Environmental National Law Journal, Sept. 21, 1992 at S1.

The location of hazardous waste treatment, storage and disposal facilities—often referred to as "RCRA" facilities because they are regulated under the Resource Conservation and Recovery Act—in communities of color is particularly troubling. These facilities are subject to special regulation precisely because the substances they handle pose chronic and acute health threats. Accidental as well as routine releases of hazardous substances may impact the health of the individuals living in a community. These same releases can also contaminate soil, groundwater, and surface water, threatening the health of citizens long after the facility is closed. In addition to these impacts, however, hazardous waste facilities can have significant socioeconomic impacts on the host community. For example, they can contribute to the breakdown of the community structure and negatively affect domestic, educational, and employment stability, community cohesion, and property values. Common sense tells us that the psychological effect of the constant threat of a catastrophic accident is a real burden for a community.

Although RCRA facilities are sometimes touted as an economic development vehicle for depressed communities, a large hazardous waste dump also imposes infrastructure costs on an entire community. The hazardous substances sent to the dump must travel a community's highways and railroads, and so routinely use resources—and pose dangers—even beyond the boundaries of the facility itself. For a community to properly protect its citizens, there will be emergency response and monitoring costs. All of these are real costs, and they are inescapably associated with any hazardous waste handling facility.

The anecdotal experiences of communities such as Emelle, Alabama, and Alsen, Louisiana, both of which are home to huge hazardous waste facilities, also demonstrate that these toxic dumps can drive away other businesses and impact local property owners. Local citizens at Emelle state that their county has become a "hazardous waste junkie," depending on hazardous waste for much of its revenue. See Bailey and Faupel, Environmentalism and Civil Rights in Sumter County, Alabama, in Race and the Incidence of Environmental Hazards: A Time for Discourse (1992).

Some States have recognized the dangers inherent in hazardous waste facilities and enacted statutes requiring hazardous waste companies to negotiate with a community targeted for a dump, and compensate the community for the adverse impacts caused by the dump. See, e.g., Massachusetts General Laws Chapter 21D, section 12.

At present, the applicable environmental laws, such as RCRA, simply do not take into account the social, economic and cumulative effects of multiple sitings in an area. Rather, siting a hazardous waste facility is treated as a technical checklist of engineering and geological factors. This leaves citizens with no enforceable means of having social, economic and cumulative impacts taken into account in the siting process for a future hazardous waste facility.

Furthermore, existing civil rights laws are not geared toward addressing discriminatory siting, and often require proof of intentional discrimination. This traditional approach focuses on the overriding motivation behind a siting decision, rather than the consequences. The consequences of these decisions, however, as a practical matter are most important to citizens.

Two matters currently being handled by our Louisiana office show the difficulties citizens face in making State agencies take discriminatory siting impacts into account.

In one case we have been representing a group of African-American citizens of Noxubee County, Mississippi. The non-white population of Mississippi as a whole is approximately 35 percent of its total population. Noxubee County, by contrast, is approximately 68 percent non-white. The poverty rate in Noxubee County is extremely high, and unemployment runs as high as 12 percent.

The economic base of Noxubee County and the surrounding region is primarily timber and farming, and as a result the area produces very little hazardous waste. In fact, according to documents prepared by the DEQ, in 1990 the entire State of Mississippi produced only about 45,000 tons of hazardous waste requiring offsite disposal.

Nonetheless, there are proposals to site two hazardous waste landfills and a hazardous waste incinerator in Noxubee County, which would bring hundreds of thousands of tons of hazardous waste into the county each year. Despite the obvious potential for negative impacts to the county and its citizens, the siting regime now in place would allow both of these facilities to be sited with little if any consideration for these impacts.

To attempt to get these impacts taken into account in the siting process, we turned to Title VI of the Civil Right Act of 1964, which forbids discrimination in the administration of programs using Federal funding. Under the EPA implementing regulations, programs receiving EPA funding may not be administered in a manner that has the practical effect of subjecting individuals to discrimination. Mississippi's hazardous waste permitting program, which derives a majority of its funding from Federal sources, is doing just that by failing to consider the social and economic consequences of hazardous waste facility siting. Consequently, we filed an administrative complaint with the U.S. Commission on Civil Rights and the EPA's office of Civil Rights, seeking to have Mississippi's program reformed.

We are handling a similar administrative complaint under Title VI involving the siting of a hazardous waste facility in Carrville/St. Gabriel, an unincorporated, mostly African-American community in Iberville Parish, Louisiana. It is already surrounded by chemical plants whose annual output of air toxics rivals that of a number of States. Carrville/St. Gabriel is a community already heavily impacted by toxic discharges and heavy industrial activity. The people who live there do not want another hazardous facility. Like the Mississippi DEQ, the Louisiana DEQ has treated the permitting process as essentially a checklist, and essentially made a commitment to issue a RCRA permit to the facility. It has failed to provide citizens sufficient process, and to adequately take into account cumulative risk, discriminatory impacts, and socioeconomic factors. This complaint is being investigated by the EPA's Office of Civil Rights as well, and we will attempt to have the Louisiana siting regime reformed to make it more fair to citizens.

Title VI is a useful statute for citizens, and we fully expect to win these Title VI bases. The point, however, is that environmental laws should provide a mechanism by which discrimination is avoided in the first place. For a systemic problem, systemic solutions are required.

Given the shortcomings in the law as it now stands, it is imperative that a model Federal statute be developed to deal squarely with this problem of environmental impacts falling disproportionately on minorities communities. Congress, through its passage of H.R 1924, H.R 1925, and H.R. 2105, has a unique opportunity to address environmental justice issues and to ensure that citizens are afforded an opportunity for meaningful input into decisions regarding the siting of hazardous waste facilities and other polluting industry.

The Environmental Equal Rights Act, H.R 1924, is a major step toward providing citizens with enforceable rights against the discriminatory siting of industrial facilities. H.R. 1924 establishes an important forum and equitable burden-shifting process for examining information about the potential impact of a waste facility. H.R. 1924 provides that a citizen petitioner may challenge the construction of certain waste facilities by showing that the proposed facility would be located in an environmentally disadvantaged community, and that the proposed facility may affect the human health or the environment of the community.

These provisions are good. They should be expanded to address the range of problems that citizens face. In order for H.R. 1924 to adequately address environmental racism and disparate impacts, it must also consider the social and economic impacts and cumulative risks addressed earlier in this testimony.

In addition, H.R. 1924 permits an "environmentally disadvantaged community" to contest the facility siting upon sufficient showing of potential adverse effects to human health and environmental quality. An "environmentally disadvantaged community" is defined as a low-income, minority communities located within a two miles of the proposed facility. It appears that the goal of the two-mile figure is to ensure that the definition of an environmentally disadvantaged community captures a community that is being dumped on and that is also minority or low income. We are uncertain whether the two-mile radius adequately captures this situation and would like to keep working with the committee on this. The Sierra Club Legal Defense Fund has other suggestions for improving aspects of H.R. 1924. These suggestions are attached; we hope to work with the committee in considering these and perhaps other helpful modifications to this important bill.

In sum, the Environmental Equal Rights Act offers an important procedural right to communities that is not now available and has a very workable framework. However, the bill should take into account more types of social and economic risk than it does at present.

The Environmental Justice Act of 1993, H.R. 2105, and the Environmental Health Equity Information Act of 1993, H.R. 1925, are crucial pieces of legislation that would provide impacted communities with necessary information, resources, and remedies for addressing the legacy of pollution in those communities. We support the mission of the legislation as drafted, and strongly urge the subcommittee to add a citizens enforcement provision to H.R. 2105 to guard and promote the interests of these underrepresented communities.

For all the reasons stated above, we believe that State and Federal siting and permitting programs are being administered in a fashion that discriminates against communities of color and the poor. Specifically, siting criteria are designed and administered in a fashion that pushes commercial hazardous waste facilities into areas that are largely populated by minorities. This is taking place despite the fact that there are less discriminatory means of carrying out the siting process.

We urge the subcommittee to support the passage of the H.R. 1924, H.R. 1925, and H.R. 2105, affording citizens protection under the law and the right to redress environmental inequities.

SIERRA CLUB LEGAL DEFENSE FUND—PROPOSED AMENDMENTS TO H.R. 1924, THE ENVIRONMENTAL EQUAL RIGHTS ACT

I. CONSIDERING SOCIAL AND ECONOMIC IMPACTS

Amend section 7014 at page 5, line 5, as follows (bracketed text is deleted):

[.]; or

(iii) the social or economic characteristics of such community or a portion of such community.

Explanation for amendment.—The purpose of this amendment is to ensure that all potentially detrimental consequences from the siting of a facility are considered, including negative social and economic consequences.

II. NOTICE TO PUBLIC OF RIGHT TO PETITION

Insert after section 7014(c) at page 6, line 7:

(d) Notice to Public.—(1) Within 30 days of receipt of a proposal for a new facility for the management of solid or hazardous waste, and within 30 days before issuing a permit for such facility, the Administrator or the State shall publish notice, as set forth in subsection (2), to inform affected citizens of their right to file a petition under section (a).

(2) The Administrator or the State shall make a reasonable effort to notify affected citizens of their right to file a petition under section (a) through published announcements and such other methods or media reasonably required to notify citizens of their rights. The Administrator or the State also shall make a particular effort to notify citizens residing or employed closest to the location of the proposed new facility of their right to file a petition under section (a). At a minimum, notice of the right to file a petition shall be published for 5 days in a newspaper of general circulation and notice shall be sent by first class mail to any citizen who has requested such information.

(3) The Administrator or the State may seek reimbursement from the project proponent for costs associated with providing notice as set forth in this subsection.

Explanation for amendment.—The purpose of this amendment is to add a provision that requires notice to affected citizens of the petition process set forth in section 7014.

III. CITIZEN RIGHT TO REBUT SHOWING MADE BY PROJECT PROPONENT

Insert after section 7014(b) at page 5, line 24:

The petitioner shall have adequate opportunities to submit evidence, cross-examine witnesses, and otherwise demonstrate that the proponent has not established its burden as set forth in subsections (3)(A) and (3)(B). Explanation for amendment: The purpose of this amendment is to add a provision that allows petitioners an adequate opportunity to present evidence to rebut the showing made by the project proponent.

Mr. SWIFT. Thank you very much.

Barry Hill?

STATEMENT OF BARRY E. HILL

Mr. HILL. Good morning, Mr. Chairman. I want to thank you for having this hearing, also thank you for bearing with me and my children.

Mr. SWIFT. I used to get to go to work with my dad. He drove a truck, which had to be a heck of a lot more interesting.

Mr. HILL. With children, there is always something that happens. Today is a lesson in civics for them.

Mr. SWIFT. They are extraordinarily well-behaved.

Mr. HILL. Thank you. I will tell my wife that.

I am a member of the American Bar Association's standing committee on environmental law. That entity in the ABA hierarchy, our responsibility is to assist the association in developing policy on major issues and also to serve as liaison for the 50 or 60 committees, sections that deal with environmental law issues. And the standing committee on environmental law was instrumental in getting the resolution on environmental justice passed this summer.

I am going to focus most of my comments on that particular document because it is a forward-looking document. You have heard the term today, "environmental racism." You also heard the term, "environmental justice." You may have heard the term, "environmental classicism."

We prefer to use environmental justice because that is a goal to be attained. It is a forward-looking approach. The problem has been identified. Surely, there are different ways to analyze the facts and evidence; but there is a problem. You must address the problem. The problem is a civil rights problem, an environmental problem, and a public health problem; so how do you go about dealing with that problem?

Now, the ABA has come up with the resolution and the resolution is a potpourri of activities, that the ABA believes needs to take place in order to break the pattern of placing these facilities in minority or low-income communities.

Subsection A states the Federal, State and local governments must enforce the environmental laws and companion regulations equally. The environmental justice movement is not concerned with equal pollution, as Dr. Bullard was saying, but is concerned with equal enforcement of the laws. That is incredibly important. The National Law Journal Article that came out demonstrates the laws are not being applied, not being enforced, not being implemented equally. That is why the subsection A of the first resolved clause wants to address that particular problem.

Subsection B states that Federal, State, territorial, and local governments must improve agency procedures to ensure that information is distributed to the communities and the communities can participate effectively in the decisionmaking process.

One of the main problems with the Environmental Protection Agency over the years is that it was only concerned with dispensing information; but dispensing information does not mean public participation. We must go beyond sharing the information; and even the information that is shared, people must be able to understand it, to use it.

If you look at it from this point of view, you have facts; facts may be just bare pieces of information. Information is something you can use, something you can utilize. It is facts plus, so to speak. You go beyond information. That is when information becomes intelligence.

When you are looking at these environmental problems and you are talking about responding to the contamination problems in a particular community, you are talking about something that goes beyond facts. You are talking about intelligence. That is what public participation is all about, at least effective public participation. So subsection B attempts to address that particular problem.

Subsection C states that Congress, State, territorial, local legislatures should enact legislation as appropriate to respond to the problem which, again, is a civil rights, environmental, and public health law. H.R. 1924, H.R. 1925, and H.R. 2105, even though they are not perfect bills, they do attempt to address the problem in their own significant ways.

Now, subsection A of the second resolved clause states that further documentation of the causes and consequences of the inequitable distribution of environmental burdens is necessary. You heard a lot about these studies. ATSDR and other agencies of the Federal Government need to do more. The information is there. It is a question of making the information interesting, something that I said before: Information plus, which means intelligence.

What does it mean as a practical matter for there to be long-term exposure to these toxins? What effect does it have on the public health of the people?

Mrs. Johnson talked about the cancers, the rashes, the unexplained rashes, the headaches, the abortions that need to take place because fetuses have been born with the brains coming out of their heads. Something must be done for this huge public health problem. Further documentation of long-term exposure and the effects on public health is incredibly important.

Subsection B states that legal services in the environmental law area should be made available to those who are adversely affected and who reside in these communities.

This attempts to address the lack of significant—let's say the ability in the environmental law area for these people and for these communities. You have public interest law firms; they are not focusing on environmental law. Usually it is housing problems, other everyday problems.

Environmental law is something that is very different. Hopefully, law firms will get much more involved by contributing on a pro bono basis services they have to offer to these communities. Something must be done in this area, because if you do not know what your rights are, you cannot—let's say, make sure your rights are being protected. So this is a way of attempting to do that.

Subsection C of the second resolved clause states additional training of environmental lawyers is needed to assist them in recognizing the problem of environmental inequity. We talked about title VI. Title VI is a civil rights piece of legislation.

Environmental lawyers are not generally trained in civil rights law. Also there should be cross-training as a practical matter, whereby environmental lawyers know more about civil rights law and civil rights lawyers know more about environmental law. That is the only way there can be movement if there is a bridging of the professions as a practical matter.

Subsection D urges that law schools consider expanding their curricula in programs to educate their students in the area. This is incredibly important because even though this is a fairly new term as far as environmental justice is concerned, or environmental racism, there is a problem that has been existing for a long time.

Now it is a question of getting people to act, getting schools to be much more involved in this area, and also clinical programs to assist people in representing their interests, whether or not it is in a courtroom or an administrative agency. This is incredibly important.

Finally, subsection E urges that State and local bar associations adopt resolutions similar to this ABA resolution. We feel it is incredibly important as a national organization, a mainstream national organization, to serve in a leadership capacity, to demonstrate to State and local bar associations that they need to get involved in this particular area.

In conclusion, the ABA is grateful for the opportunity to provide testimony to the subcommittee. I would be happy to respond to any questions that you may have on the resolution or on our interpretation of the various bills pending in Congress.

[Testimony resumes on p. 252.]

[The prepared statement and attachment of Mr. Hill follow:]

STATEMENT OF BARRY E. HILL, MEMBER, STANDING COMMITTEE ON ENVIRONMENTAL LAW, AMERICAN BAR ASSOCIATION

Mr. Chairman and Members of the Subcommittee: Good morning. My name is Barry E. Hill and I practice environmental law out of Washington, D.C. with the firm, Dickstein, Shapiro & Morin, and I am a member of the American Bar Association's Standing Committee on Environmental Law. On behalf of the American Bar Association, I am pleased to testify before the subcommittee to discuss briefly the issue of environmental justice, and to respond to any questions that the members may have regarding the resolution on environmental justice that was adopted by the ABA House of Delegates this summer at the annual meeting in New York City. The resolution is now official policy of the American Bar Association. The resolution and the report to the House of Delegates are attached to my statement.

Since this is an informational hearing on the issue of environmental justice, I thought that it would be helpful to provide the members of the subcommittee with some "facts" surrounding this issue.

Now, as we all know there are two kinds of "facts"—those that you research; and those that you simply make up. I'm not suggesting that well-meaning people who have analyzed this issue have made up any facts but it is true that facts pertaining to the issue of environmental justice have been analyzed so many different ways in order to support the conclusion that the researcher was trying to reach. For example, facts have been used to support the conclusion that environmental racism, which is the precursor of the phrase environmental justice, does, in fact, exist. Facts have also been cited to show that it doesn't exist. Facts have even been elucidated to demonstrate that not enough facts are available for one to support either assertion. As a result, I am reminded of Rudyard Kipling's words in his work from sea to sea, where Mark Twain said to Rudyard Kipling: "Get your facts first, and then you can distort 'em as much as you please." I will show you what I mean.

The issue of environmental racism is, without doubt, a passionate issue in that, on one hand, critics of the charge of environmental racism point out that, although there are statistics which indicate that more minorities than whites live near toxic waste dumps, the charge is unnecessarily inflammatory and unsubstantiated and that the data are full of holes and are used selectively. Moreover, the evidence is anecdotal. Thus, they argue that instead of the phrase "environmental racism," they would prefer to use the phrase "environmental classim" since there are economic and political reasons, not race, which explain more accurately why there is a higher level of environmental waste in low-income communities.

And, they point to notorious examples where whites have been victimized:

—Of 27 communities with the Nation's largest hazardous waste landfills, 21 have majority-white populations. In fact, the largest landfill in the country is on Staten Island, New York which is 85 percent white.

—Love Canal, New York and Times Beach, Missouri were, in fact, overwhelmingly white and had to be abandoned because the communities were so badly poisoned by toxins.

They conclude, therefore, that these "facts" indicate that the problem is broader than race alone, since it suggests that low-income communities, regadless of race, also experience disproportionate harm to the environment in their communities. In sum, economic discrimination is really the basis of the problem.

Others have a somewhat different view and they argue that neither race nor income have anything to do with the decision to place a facility in a particular community. Inexpensive real estate invariably is the critical factor for the developer/company and the question as to who the pollution-generating facility's neighbors are is entirely irrelevant. Furthermore, there are often compelling reasons for the choice of a site that have absolutely nothing to do with the makeup of the community. Thus, the siting of the landfill near the predominantly poor African American town of Emelle, Alabama was chosen largely because an EA study found that it had the ideal geology. Therefore, as a result of citing such "facts," additional research may be needed since the "facts" are not uncontroverted.

On the other end of the spectrum, there are grass-roots activists, civil rights leaders, various politicians, civil rights lawyers, a growing number of traditional environmental groups, and scholars who support the charge of environmental racism. They argue that there are, indeed, a growing body of facts, and data that have been thoroughly researched and analyzed that demonstrate conclusvely that communities of color in the U.S. experience a disproportionate share of pollution and environmental problems. Industrial toxins, dirty air, and dirty water and the location of municipal landfills, incinerators and hazardous waste treatment, disposal and storage facilities are causing irreparable harm to the health of the inhabitants of these communities. Latent and overt racism, they say, is why these environmental problems have in the past been and are ignored.

Those who see a deliberate pattern of prejudice cite a host of "facts," such as:

—The Nation's largest hazardous waste landfill, serving 45 States and several foreign countries is located in Sumter County, Alabama, which is 79 percent African American;

—Pesticide illnesses affect some 300,000 farm workers annually, most of whom are Hispanics. And, Puerto Rico is one of the most polluted areas in North America;

—The most contaminated segment of California has a population that is 59 percent African American and 38 percent Hispanic; and

—All three lead smelters in Dallas, Texas have been placed in African American communities.

Cases like these are continuing to come to the surface every day which have brought siting decisions and the criterion used to make these decisions into question.

Whatever phrase one believes best characterizes the situation—whether "environmental racism," or "environmental equity," or "environmental classim," in actuality, is of no real consequence other than being an exercise in semantics of finding fault as to why the facilities or landfills are located in certain communities and, as you know, fact-finding is more effective than fault-finding. The report to the House of Delegates before you states in the first paragraph that the Standing Committee on Environmental Law and the co-sponsors prefer to use the term "environmental justice" since that is the goal to be attained. And, I am here today to advise the members of the subcommittee of the fact that the ABA decided this summer to respond to a very real problem and not to debate which phrase was more accurate, or to debate which set of facts were better because such a debate would have been beyond the length, breadth, or scope of the presentation of the resolution and the report to the House of Delegates.

Whatever the reasons are as to why a greater number of these pollution-generating facilities are located in minority and/or low-income communities, it is clear that the environmental justice movement addresses a powerful, very real fear—that is, that environmental degradation destroys the health of the inhabiants as well as the natural resources and the esthetics of the community.

Let me put it into perspective. I was astonished to read recently that the Nation's biggest concentration of hazardous waste sites, for example, is on Chicago's most black south side, and people from those communities will talk about unexplained rashes, headaches and the high incidence of cancer. Residents of the 10,000 person Altgeld Gardens housing project on Chicago's South side can talk about the babies that have been born with brain tumors and the respiratory problems that they have or the fact that babies have had to be aborted after tests revealed that the brains wee growing outside of the skulls. The toxic nightmare has taken a heavy toll on the health of the housing project's residents who live directly on top of a landfill that began operation in the 19th century by the capitalist tycoon, George Pullman, who dumped human and industrial waste from his car company into the area for 50 years. Since then, many other companies have continued the "tradition" by locating landfills nearby, giving Altgeld Gardens the dubious distinction of being the location of this country's largest concentration of hazardous waste. To the residents of Altgeld Gardens, their situation is not anectdotal.

In conclusion, I would like to end this portion of my presentation by quoting John Adams who chose the following words in December 1770 as he argued in defense of the British soldiers who were involved in the Boston massacre: "Facts are stubborn things; and whatever may be our wishes, our inclinations, or dictates of our passions, they cannot alter the state of the facts and evidence."

The facts and the evidence regarding environmental justice are set forth in the report to the House of Delegates. And, the resolution is designed to respond to this civil rights problem, public health problem, and environmental problem.

The resolution is a potpourri of activities that the ABA believes needs to take place in order to break the pattern of placing these facilities in minority and/or low income communities:

—Subsection (a) that the Federal, State and local governments must enforce the environmental laws and the companion regulations equally. The environmental justice movement is not concerned with equal pollution; but, instead, is concerned with equal enforcement.

—Subsection (b) states that Federal, State, territorial, and local governments must improve Agency procedures to ensure that information is distributed to the communities and the communities can participate effectively in the decisionmaking process.

—Subsection (c) states that Congress, State, territorial and local legislatures should enact legislation, as appropriate, to respond to this problem.

—Subsection (a) of the second resolved clause states that further documentation of the causes and the consequences of the inequitable distribution of environmental burdens is necessary.

—Subsection (b) states that legal services in the environmental law area should be made available to those who are adversely affected and who reside in these communities.

—Subsection (c) states that additional training of environmental lawyers is needed to assist them in recognizing the problem of environmental inequity.

—Subsection (d) urges that law schools consider expanding their curricula and clinical programs to educate their students in this area.

AMERICAN BAR ASSOCIATION
STANDING COMMITTEE ON ENVIRONMENTAL LAW
COMMISSION ON HOMELESSNESS AND POVERTY
SECTION OF INDIVIDUAL RIGHTS AND RESPONSIBILITIES
NATIONAL BAR ASSOCIATION, INC.
HISPANIC NATIONAL BAR ASSOCIATION
REPORT TO THE HOUSE OF DELEGATES

RESOLVED, That the American Bar Association

a. supports actions by federal, state, territorial and local governments, private entities and academic institutions to achieve implementation and enforcement of environmental laws, regulations and policies so that a disproportionate share of the burden of environmental harm does not fall on minority and/or low-income individuals, communities or populations;

b. urges federal, state, territorial and local administrative agencies to give priority attention to this problem by, among other things, improving agency procedures governing access to information and the decision-making process, distributing information about environmental impacts and applicable laws, by adopting regulations and policies to mitigate or eliminate those impacts, and assessing and managing environmental risks so that they better take account of the need to eliminate such inequities; and

c. urges Congress, state and territorial legislatures and local governments to enact legislation, as appropriate, and to take other appropriate measures to redress and eliminate situations in which minority and/or low-income people have borne a disproportionate share of harm to the environment.

BE IT FURTHER RESOLVED, That the American Bar Association urges:

a. further documentation of the causes and consequences of the inequitable distribution of environmental burdens;

b. the delivery of legal services in the area of environmental law to eligible persons in minority and/or low-income communities;

c. additional training of environmental lawyers to recognize, address and redress incidences of environmental inequity;

d. law schools to consider the expansion of curricula and clinical programs to educate students to deal with these problems; and

e. state and local bar associations to adopt resolutions similar to this ABA resolution.

[This report does not constitute ABA policy. It serves as background information to the House of Delegates. See accompanying resolution for official policy of the Association on the issue on environmental justice.]

REPORT

> The physical environment of America's minorities -- Hispanics, Native Americans, Asians, African Americans, the poor of any color -- has in one way or another been left out of the environmental cleanup of the past two decades. Black children, as a whole, have more lead in their blood than do white children. Blacks are decidedly over-represented in air-pollution nonattainment areas. The environment of migrant farm workers, particularly in their exposure to hazardous pesticides, has not been well protected, to say the least. People of color are much more likely to have hazardous waste sites in their backyards than are whites.[1]

The proposed resolution responds to an increasing body of disturbing evidence that the burden of adverse environmental impacts falls disproportionately on people of color and/or low income populations. While other terms have been used to describe this phenomenon, notably "environmental racism" and "environmental equity," the term "environmental justice" is the preferred characterization of this struggle, reflecting as it does the goal to be achieved.

1. Growth of the Environmental Justice Movement

Over the past two decades, public and private institutions and academic scholars have conducted research and investigation to determine whether the burdens of environmental harm and the benefits of environmental protection have been distributed inequitably to minority and/or low income populations.[2]

The studies show that our environmental laws, as well as the means by which they are implemented and enforced, do not adequately protect these populations. While the causes are many and varied, and the specific instances of injustice sometimes difficult to establish under our current legal framework,[3] the prevalence of environmental injustice -- or the lack of environmental justice -- cannot be ignored and should be addressed by the American Bar Association.

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[1] John Heritage, Editor, letter to the readers in "Environmental Protection -- Has It Been Fair?" 18 EPA Journal No. 1 175N-92-001 (March/April 1992).

[2] For a comprehensive list of these studies, see Luke W. Cole, "Empowerment as the Key to Environmental Protection: The Need for Environmental Poverty Law," 19 Ecology L.Q. 619 (1992).

The environmental justice movement is said to have started in 1982 as a result of the outrage generated by the decision of the State of North Carolina to build a toxic waste landfill for PCB-contaminated dirt in Warren County.[4] The contaminants to be buried there were to come from fourteen different counties in the State.[5] Warren County, however, had the highest percentage of people of color of any county in the state and was one of the poorest.[6] The ensuing protest, the first national African-American protest against the location of a hazardous waste facility, involved not only residents of Warren County, but civil rights, labor and political leaders as well as environmental activists. Demonstrations in opposition to the proposed site resulted in the arrests of more than 500 people, including Dr. Benjamin F. Chavis, Jr., then-Executive Director of the United Church of Christ Commission for Racial Justice (now Executive Director of the National Association for the Advancement of Colored People), Dr. Joseph Lowery of the Southern Christian Leadership Conference; and Congressman Walter Fauntroy (D-DC).

2. What Studies Have Shown Over Several Decades

At least since the early 1970s, academicians, social scientists and federal agencies have been noting and documenting the disproportionate distribution of the adverse effects of environmental pollution on lower income populations;[7] early in the 1980s attention was turned to the impact on minority populations. Some of the more prominent of these studies and their results are set forth below.

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[3] See, e.g., Richard J. Lazarus, "Pursuing Environmental Justice: The Distributional Effects of Environmental Protection," 87 NW U.L. Rev. (forthcoming 1993) (examining the difficulty of achieving environmental justice through use of the civil rights laws); Rachel D. Godsil, Note, "Remedying Environmental Racism," 90 Mich. L. Rev. 394 (1991) (concluding a need for new federal and state legislation to address the issue); Regina Austin & Michael Schill, "Black, Brown, Poor and Poisoned: Minority Grassroots Environmentalism and the Quest for Eco-Justice," 1 Kans. J. of L & Pub. Pol. 69 (Summer 1991) (advocating grassroots organizing instead of legal action to remedy environmental injustice).

[4] Robert D. Bullard, Dumping in Dixie: Race, Class and Environmental Equity, 35 (1990).

[5] Id.

[6] Id. at 37.

a. Findings of the U.S. General Accounting Office

In 1982, the same year as the Warren County protest, Congressman Fauntroy and Congressman James J. Florio requested the U.S. General Accounting Office (hereinafter, GAO) to conduct a study "to determine the correlation between the location of hazardous waste landfills and the racial and economic status of the surrounding communities."[8]

The GAO found, among other things, that African-Americans were the majority of the population in three of the four communities where the four off-site hazardous waste landfills[9] (Chemical Waste Management, Sumter County, Alabama; Industrial Chemical Company, Chester County, South Carolina; SCA Services, Sumter County, South Carolina; and the Warren County PCB landfill, North Carolina) were located.[10] At least 26% of the population in all four communities had incomes below the poverty level and most of that population was African-American. In the 1980 census, the poverty level was $7,412 for a family of four.

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[7] See, e.g., Council on Envtl Quality, The Second Annual Report of the Council on Environmental Quality 192-93 (1971) (finding that air pollution is distributed inequitably by income); Brian J.L. Berry et al., The Social Burden of Environmental Pollution: A Comparative Metropolitan Data Source 563, 570-71 (1977) (reporting that solid waste sites in Chicago are distributed inequitably by income), cited in Cole, supra note 2, at 623 n.9.

[8] U.S. General Accounting Office, Report, Siting of Hazardous Waste Landfills and Their Correlation With Racial and Economic Status of Surrounding Communities, GAO/RCED-83-168, B-211461 (June 1, 1983). The GAO focused its review on the eight southeastern states (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee) which comprise the U.S. Environmental Protection Agency's (EPA) Region IV.

[9] Off-site landfills are "those not part of or contiguous to an industrial facility," id., at 1.

[10] Id.

b. 1987 United Church of Christ Report

In 1987, the United Church of Christ Commission for Racial Justice (UCC) released its report, Toxic Wastes and Race in the United States: A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste Sites (hereinafter UCC Report). Among other things, the UCC Report concluded that the racial composition of a community proved to be the most significant factor among the variables tested in the decision to locate hazardous waste facilities.[11]

More specifically, the UCC Report found that communities with the greatest number of commercial hazardous waste facilities had the highest composition of racial and ethnic residents.[12] In communities with two or more facilities or one of the nation's five largest landfills, the study found that the average minority percentage of the population was more than three times that of communities without facilities (38% compared to 12%). The UCC Report also concluded that in communities with one commercial hazardous waste facility, the average minority percentage of the population was twice the average minority percentage of the population in communities without such facilities (24% compared to 12%). Finally, the UCC Report found that three out of the five largest commercial hazardous waste landfills in the United States were in predominantly African-American or Hispanic communities. At that time, those three landfills (Emelle, Sumter County,

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[11] The UCC conducted a cross-sectional study of the racial and socio-economic status of residents of the zip code areas surrounding the 415 commercial hazardous waste facilities in the contiguous United States that could be identified through EPA's Hazardous Waste Date Management System (since replaced by the Resource Conservation and Recovery Information System), and compared those characteristics to those of zip codes that had no such facilities. For criticisms of the UCC study see Lazarus, supra note 3, at n.55, 28 n.73.

[12] Disproportionate impact also has been documented on tribal lands. For example, a 1985 study by the Council of Energy Resource Tribes commissioned by EPA revealed that "as many as 1,200 hazardous waste generators or other hazardous activities sites were located on or near the twenty-five Indian reservations selected for the survey." Richard A. Dubey et al., "Protection of the Reservation Environment: Hazardous Waste Management on Indian Lands," 18 Envtl. L. 449, 459 n.35 (1988) as quoted in Kelly Michele Colquette & Elizabeth A. Henry Robertson, "Environmental Racism: The Causes, Consequences and Commendations," 5 Tul. Envtl L. J. 153, 180-181 (1991).

Alabama; Scotlandville, Louisiana; and Kettleman City, California) accounted for 40% of the total estimated commercial landfill capacity in the nation. As a result of this comprehensive study, the term "environmental racism" first was coined.[13]

c. Environmental Protection Agency's 1992 Report

The findings of these (and other) studies were largely confirmed by the U.S. Environmental Protection Agency (EPA) in its June 1992 Report.[14] The Agency's Environmental Equity Working Group concluded that:

o Racial minority and low-income populations experience higher than average exposure to selected air pollutants, hazardous waste facilities, contaminated fish, and agricultural pesticides. Exposure does not always result in an immediate or acute health effect. High exposures and the possibility of chronic effects nevertheless are a clear cause for human health concerns;

o There are clear differences between racial groups in terms of disease and death rates. There are also limited data to explain the environmental contribution to these differences. In fact, there is a general lack of data on environmental health effects by race and income. For diseases that are known to have environmental causes, data are not typically disaggregated by race and socioeconomic

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13. For additional studies on the extent to which locally undesirable land uses (LULUS) are disproportionately located in neighborhoods predominantly populated by people of color and the poor, see Robert Bullard, "Solid Waste Sites and the Black Houston Community," 53 Soc. Inquiry 273 (1983); Bullard, supra note 4; Race and the Incidence of Environmental Hazards: A Time for Discourse (B. Bryant and P. Mohai eds. 1992) (reviewing 15 such studies); and Vicki Been, "Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics" (draft manuscript in the possession of report authors) (report on pilot project assessing whether an examination of the socio-economic characteristics of host communities at the time they were chosen would shed light on the competing disproportionate effect and market dynamic theories).

14. EPA, Environmental Equity: Reducing Risk for all Communities, EPA A230-R-92-008 (June 1992). See also EPA, "Environmental Protection -- Has It Been Fair?" 18 EPA Journal, No. 1 175N-92-001 (March/April 1992).

group. The notable exception is lead poisoning: a significantly higher percentage of African-American children compared to white children have unacceptably high blood lead levels;

o Similarly, environmental and health data are not routinely collected on risks posed by multiple industrial facilities, cumulative and synergistic effects, or multiple and different pathways of exposure. Risk assessment and risk management procedures are not in themselves biased against any particular income or racial groups. However, risk assessment and risk management procedures can be improved to take better into account equity considerations;[15]

o The language, format and distribution of written materials, media relations and efforts between the EPA and other government agencies and racial minority groups and/or low-income groups can be improved to communicate better information related to environmental problems. In addition, EPA can broaden the spectrum of groups with which it interacts;

o Case studies of EPA program and regional offices reveal that opportunities exist for addressing environmental equity issues and that there is a need for environmental equity awareness training; and

o Native American communities and tribal governments are a unique cultural and political group who have distinct environmental problems. Tribes often lack the physical infrastructure, institutions, trained personnel, and resources necessary to protect their members and the reservation environment.[16]

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15. In a related context, one scholar has proposed adding equity sensitivity considerations to property rights claims in natural resources disputes. See A. Dan Tarlock, "Environmental Protection: The Potential Misfit between Equity and Efficiency," 63 U. Colo. L. Rev. 871 (1992).

16. While studies to date have been confined to the EPA's administration of pollution and pesticide laws, environmental and natural resources laws administered by other federal, state and local agencies also should be studied to determine whether the types of trends raised in EPA studies have wider applicability.

d. Findings of the National Law Journal

EPA's environmental equity record was further put into question by an eight-month study conducted by the National Law Journal (NLJ Report).[17] That study, released in the fall of 1992, examined the correlation between race and income and the Agency's enforcement of environmental laws and regulations. The study found that EPA, in effect, discriminates against minority communities not only in the cleanup of hazardous waste sites, but in enforcing all federal environmental laws aimed at protecting citizens from air, water and waste pollution. According to the NLJ special report, the disparity in responding to and enforcing hazardous waste laws is based on race and not on income. The NLJ Report came to these conclusions as a result of its computer-assisted analysis of every federal environmental lawsuit concluded in the last seven years and every residential toxic waste (1,177) site in the 12-year history of the Agency's Superfund program. Among other things, the NLJ Report concluded:

o It takes 20% longer for advanced hazardous waste sites in minority communities to be placed on the Superfund National Priority List than sites in white neighborhoods;

o Minority areas wait the longest for a federal response to hazardous waste complaints; low-income communities wait almost as long. (But white communities wait less than high income communities, thus indicating that color is a more important factor than income);

o At sites in minority communities, EPA selects "containment" (capping or walling off of a hazardous site)

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[17] Marianne Lavelle & Marcia Coyle, "Unequal Protection: The Racial Divide in Environmental Law," Nat'l L.J., Sept. 21, 1992, at S1-12. Among other awards presented to the Journal for this series were the 1992 George Polk Award for Legal Reporting, the Scripps Howard Foundation Edward F. Meeman Award for Environmental Reporting, the Investigative Reporters and Editors Award "for uncovering a pattern of unequal enforcement of federal laws in minority communities," the Unity Award in Media "for outstanding coverage of minority problems, issues and concerns," and Columbia University's Paul Tobenkin Memorial Award for "outstanding achievement in the fight against racial and religious hatred, intolerance, discrimination and bigotry."

7% more frequently than the preferred permanent "treatment" method of eliminating the waste or ridding it of its toxins. At sites in white communities, EPA orders permanent treatment 22% more often than containment.

o Penalties imposed on violators of environmental laws in minority areas are lower than those imposed for violations in white areas. The federal government imposes an average of $335,566 in penalties for violations of hazardous waste laws for white areas and only $55,318 in minority neighborhoods. Furthermore, for all the federal environmental laws aimed at protecting citizens from air, water and waste pollution, penalties in white communities are 46 percent higher than in minority communities;[18] and

o There is a disparity in the minority community's exposure to environmental harm when compared to the exposure of the residents in white areas. For example, a greater proportion of minorities live in areas that do not meet pollution standards set by the Clean Air Act (46% of African-Americans, compared to 33.6% of whites, live in communities where carbon monoxide levels exceed the EPA's pollution standards; 62.2% of African-Americans live in areas where ozone levels exceed EPA limits; more than 57% of Hispanics live in areas polluted by carbon monoxide, while greater than 71% of Hispanics reside in communities with excessive ozone levels).

e. Other Studies, Articles and Conferences

Other studies have been undertaken during the past three decades that show that minority communities and/or the poor suffer disproportionately from garbage dumps,[19] air pollution,[20] lead exposure,[21] pesticide exposure,[22] noise pollution,[23] and rat bites.[24] African-Americans and Native

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[18] See "EPA's Reilly Replies to 'Unequal Protection'," Nat'l L. J., January 25, 1993.

[19] Berry et al., supra note 7, at 563, 570-71 (1977) (reporting that solid waste sites in Chicago are distributed inequitably by race), cited in Cole, supra note 2, at 625 n.17; Bullard, supra note 13 (finding that garbage dumps in Houston are placed disproportionately in black neighborhoods), cited in Cole, supra note 2, at 625 n.17.

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[20] Michael Gelobter, "Toward a Model of Environmental Discrimination," in Bryant and Mohai (eds.), supra note 13, at 65-68 (arguing that damage caused by air pollution is inequitably distributed by race in urban areas); Myrick Freeman, "The Distribution of Environmental Quality," in Environmental Quality Analysis 243, 264 (A.V. Kneese & B.T. Bower eds., 1972) (finding that air pollution is distributed inequitably by race in Kansas City, St. Louis and Washington, D.C.), cited in Cole, supra note 2, at 625 n.17; Berry et al., supra note 7 at 559-062, 572 (noting that air pollution in 13 major urban areas is distributed inequitably by race), cited in Cole, supra note 2, at 625 n.17.

[21] Olivia Cater-Pokras et al., "Blood Lead Levels of 4-11-year-old Mexican American, Puerto Rican, and Cuban Children," 105 Pub. Health Rep. 388, 389 (1990) (finding that Mexican-American and Puerto Rican children may be at a higher risk of lead poisoning than the general population because they are more likely to live in inner cities and in poverty), cited in Cole, supra note 2, at 625 n.17; Kathleen R. Maheffey et al., "National Estimates of Blood Lead Levels, 1976-1980," 307 New England J. Med. 573, 578 (1982) (reporting that black children suffer from lead toxicity six times more frequently than white children), cited in Cole, supra note 2, at 625 n.17.

[22] Marion Moses, A Field Survey of Pesticide-Related Working Conditions in the U.S. and Canada: Monitoring the International Code of Conduct on the Distribution and Use of Pesticides in North America, 1 (1988) (finding that the vast majority of farmworkers are people of color and that pesticides comprise the major health risk to farm workers), cited in Cole, supra note 2, at 626 n.17; F.W. Kutz et al., "Racial Stratification of Organochlorine Insecticide Residues in Human Adipose Tissue," 19 J. Occupational Medicine 619, 622 1977) (noting that a national study detected almost twice as much of the pesticide DDT in the fat tissue of African-Americans as in the fat tissue of whites and that the pesticide lindane was detected more than twice as often in African-Americans as in whites), cited in Cole, supra note 2, at 626 n.17.

[23] See, e.g., Berry et al., supra note 7, at 563, 573 (finding that noise pollution in three major urban areas is distributed inequitably by race), cited in Cole, supra note 2, at 625 n.17.

[24] Id. at 563, 567 (finding that the risk of rat bites in the Chicago area is distributed inequitably by race.

Americans also eat more fish than whites and as a result are exposed more to the toxics that have been bioaccumulated by those fish.[25]

A 1990 study by Clean Sites found that sites in rural poor counties are less likely than those in other areas of the country to be included on the National Priorities List of federal priority sites.[26] In addition, the Clean Sites study noted that the disproportionate effect of the population factor in the EPA's Hazard Ranking System may result in rural populations who rely on private wells for drinking water not receiving equal protection, thus raising the question of whether adequate efforts are being made to evaluate drinking water in many cases where site documents indicate a threat to drinking water.

In addition to these studies, numerous articles have been published in law school journals,[27] books,[28] periodicals,[29] newspapers and magazines,[30] and conferences and seminars have

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[25] Patrick G. West et al., "Minority Anglers and Toxic Fish Consumption: Evidence from a Statewide Survey of Michigan," in Bryant and Mohai (eds.), supra note 13, at 100.

[26] Clean Sites, Hazardous Waste Sites and the Rural Poor: A Preliminary Assessment (March 1990).

[27] In addition to the law journal articles cited in the text and footnotes to this report, see Jane Perkins, "Recognizing and Attacking Environmental Racism," 26 Clearinghouse Rev. 389 (1992); Robert W. Collin, "Environmental Equity: A Law and Planning Approach to Environmental Racism," 11 Va. Envtl. L.J. 495 (1992); Luke W. Cole, "Remedies for Environmental Racism: A View from the Field," 90 Mich. L. Rev. 1991 (1992); Naikang Tsao, "Ameliorating Environmental Racism: A Citizens' Guide to Combatting the Discriminatory Siting of Toxic Waste Dumps," 67 N.Y.U. L. Rev. 366 (1992); Race, Class and Environmental Regulation (Natural Resources Issue), Contents: Gerald Torres, "Introduction: Understanding Environmental Racism," 63 U. Colo. L. Rev. 871 (1992); W.B.C. Chang, "The 'Wasteland' in the Western Exploitation of 'Race' and the Environment," 63 U. Colo. L. Rev. 839 (1992); Joan Z. Bernstein, "The Siting of Commercial Waste Facilities: An Evolution of Community Land Use Decisions," 1 Kans. J. of L. & Pub. Pol'y 83 (1991); Joseph P. Tomain "Distributional Consequences of Environmental Regulation: Economics, Politics and Environmental Policymaking" (unpublished manuscript in possession of

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report author); Judith V. Royster, "Environmental Protection and Native American Rights: Controlling Land Use Through Environmental Regulation," 1 *Kans. J.L. & Pub. Pol'y* (1991).

[28] *See*, *e.g.*, *We Speak for Ourselves: Social Justice, Race and the Environment* (Dana Alston ed. 1990).

[29] "Native Hawaiian Historical and Cultural Perspectives on Environmental Justice," *Race, Poverty and the Environment*, Vol. III, No. 2 (1992); Dana Alston, "Transforming a Movement," *Race, Poverty and the Environment* 1 (1991/1992); Bullard and Wright, "Environmentalism and the Politics of Equity: Emerging Trends in the Black Community," 12 *Mid-American Rev. of Soc*. 25 (1987).

[30] *See*, *e.g.*, "Special Report, Environmental Decisions Lack Ethnic Justice" -- Gore, Christian Science Monitor, Jan. 12, 1993, at 9; Scott Bronstein, "Foes Allege 'Environmental Racism' -- DNR Board Hears Protest Against Incinerator Plan," Atlanta J. & Const., Dec. 10, 1992, Sect. F, at 2; Tom Gorman, "Message from Environmentalist Triggers Allegations of Racism," L.A. Times, Oct. 1, 1991, Part B ,at 1, col. 2; "ABA Project to Combat Environmental Racism," 37 *Hazardous Waste News*, Sept. 22, 1992; "Columbus Day Holiday Greeted with Anger by Native Americans, Called a 'Big Lie'"; "Toxic Dumping and Water Rights Main Issue in What Many See as Environmental Racism Problem," Business Wire, Sept. 11, 1992; "Tougher Permitting, Enforcement May Grow from EPA 'Equity' Report," Daily Rep. For Executives, July 27, 1992; "EPA Creates Office to Deal with Environmental Equity Issues," 38 *Pesticide & Toxic Chemical News*, July 22, 1992; "Environmental Justice Movement Gains Strong Support in Texas," Hazardous Waste Network Online Today, July 16, 1992; "Environmental Equity," 37 *Pesticide & Toxic Chemical News*, July 15, 1992; Bill Dawson, "Minorities United to Fight for Environmental Justice," Houston Chron., July 13, 1992, at 13; Nancy E. Roman, 'Environmental Racism' Rankles: Minorities Fight Dumping on Poor," Wash. Times, June 15, 1992, Part A, at A1; Steve Schneider, "Environmental Racism? Residents Say Sewage Plant 'Ravages' Community," Newsday, May 4, 1992, at 21; Scott Bronstein, "Robert F. Kennedy, Jr. Issues Call for 'Environmental Justice' for All," Atlanta J. & Const., May 2, 1992, Sect. B, at 2; "Racism and Natives: 'Disgusting' Memo

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Rocks Environmental Ministry; OPP Searching for Author of 'Hate-Note,'" Ottawa Citizen, Mar. 22, 1992, at B8; "Administration Defends EPA's Strategy for Dealing with Environmental Equity," Daily Rep. for Executives, Feb. 27, 1992, at A-7; Editorial, "Environmental Equity," Boston Globe, Feb. 26, 1992, at 12; "EPA Releases Environmental Equity Report; Waxman Dismisses 'Public Relations Ploy,'" Daily Rep. for Executives, Feb. 25, 1992, at A-21; Rae Tyson and Linda Kanamine, "EPA Takes First Step to End 'Environmental Racism,'" USA Today, Feb. 25, 1992, at 3A; Christina Cheakolos, "The Battle for 'Cancer Alley' Dumps, Factories Put Near Poor, EPA Finds 'Environmental Racism' Charged," Atlanta J. & Const., Feb. 23, 1992, Sect. B, at 4; "Environmental Policies Driven by Racism, Says UC's Bullard," 7 Envtl. Week, Feb. 20, 1992; "Environmental Racism," MacNeil/Lehrer NewsHour, Feb. 11, 1992, Tr. #4268; Connie Koenenn, "The Eco-War Hits the Streets of the Inner City; Environment: More Grass-Roots Groups are Claiming Racism and Fighting Back When Toxic Dumps and Polluting Industries Are Proposed for Their Neighborhoods," L.A. Times, Dec. 23, 1991, Part E, at 1, col. 4; Judy Pasternak, "Helping the Poor Fight Pollution; Urban Life: Activists Wage Door-to-Door Campaign Against 'Environmental Racism' of Putting Industry in Low-Income Areas. Residents Voice Interest, But Progress is Slow," L.A. Times, Dec. 5, 1991, Part B, at 1, col. 2; Darcy Henton, "Cree Blast 'Environmental Racism' -- Leader Urges Torontonians to Help Scuttle Giant Dam Project," Toronto Star, Nov. 22, 1991, at A13; Last Night: "Environmental Racism," Greenwire, Nov. 7, 1991 (TV Monitor); Mary Benanti, "Minority Groups Demonstrate Against Environmental Racism," Gannett News Service, Oct. 25, 1991; "Minorities: 'Environmental Racism' Conference Opens," Greenwire, Oct. 25, 1991 (Politics and Society); "United States: 'Environmental Racism' Challenged by Conference," Inter Press Service, Oct. 25, 1991; "From Our News Services, Session Set on Racism, Environment," Atlanta J. & Const., Oct. 21, 1991, Sect. B, at 5; Dan Morain, "Hundreds Fight Incinerator Plan; Environment: Jesse Jackson Leads Rally Against Proposed Facility. Protesters Say It Is an Example of 'Toxic Racism,'" L.A. Times, Oct. 13, 1991, Part A, at 3, col. 2; 'Growing Concern' Among Blacks; RTNDA Puts Spotlight on Racism, Environment at Final Sessions," 11 Comm. Daily, Oct. 1, 1991, at 2; "U.S. Judge Clears King and Queen County, Va. of 'Environmental Racism,'" Integrated Waste Mgmt., Aug. 7, 1991, at 8; "Environmental Racism -- The Next Frontier," 15 Tex. Indus. Envtl. Alert, Aug. 1991; Julia Flynn Siler, 'Environmental Racism': It Could be a Messy Fight," Bus. Wk., May 20, 1991 (Legal Affairs), at 116.

been held to discuss the issue.[31] In the first American Bar Association initiative to address the issue and to bring together environmental, public interest and civil rights lawyers, law professors, and social scientists, the ABA Standing Committee on Environmental Law (SCEL) organized a conference in May 1992 on "The Role of the Organized Bar and the Issues of Environmental Racism/Equity/Justice" in Williamsburg, Virginia. The conference generated extensive debate and provided sorely needed education to some of the conference participants. The conference also demonstrated the need for further discussions on this issue between environmental lawyers, private practitioners, civil rights attorneys, legal services lawyers, academicians, social activists, industry representatives, and government decisionmakers and regulators. The conference participants developed an exhaustive list of recommendations for SCEL to review and consider. As part of that process, SCEL developed the policy statement that is the subject of this report.

3. The Need for Action

While the record of environmental injustice is becoming increasingly clear, carefully documented by legal scholars, social scientists, government agencies, and civil rights, environmental and political activists, progress toward environmental justice has been slow. The reasons for this are multiple, some stemming from this country's sorrowful legacy of racism that has systematically excluded people of color from the decisionmaking process and the institutions of government as well as from better neighborhoods and schools.[32] Whatever the cause of the disproportionate distribution of environmental harms to minority and low income populations, scholars as well as public interest, legal services and private practice lawyers have recognized the difficulty of achieving environmental justice under our present environmental legal framework. Some have argued that current evidentiary barriers are too high under the civil rights laws to allow remediation of all but the most extreme situations, while others point out that successful causes of action cannot be framed under existing environmental laws.[33] The situation has been made worse by the impediments placed in the path of these communities by the administrative process, such as the impediments imposed by the formalism of that process, the geographic distance between the environmental problem and the decisionmaking agency and the highly technical and legalistic language of the decisional record. Conversely, environmental attorneys frequently are ill-equipped to respond to fact patterns and injuries that may traditionally fall within the purview of civil rights laws rather than environmental protection laws. Taken together, these barriers are virtually insurmountable for a significant portion of our population.

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[31] Bryant and Mohai eds., Environmental Racism: Reviewing the Evidence (Paper delivered at University of Michigan Law School Symposium on Race, Poverty, and the Environment, Jan. 1992) reprinted in Bryant and Mohai, supra note 13, at 163; Michael Gelobter, The Distribution of Air Pollution by Income and Race (Paper presented at Second Symposium on Social Science in Resource Management, Urbana, Illinois, June 1988).

[32] See Lazarus, supra note 3 (citing racism, the relative absence of minority economic and political power and the structure of environmental policy making, particularly the exclusion of minority participation in the formation of environmental policy, as causes for the inequitable distribution of environmental costs and benefits).

4. Initiatives Taken in Response

In partial response to the absence of environmental justice, legislation has been introduced in Congress.[34] One of these bills, the Environmental Justice Act of 1993, calls for a comprehensive survey of every county or appropriate geographical unit in the country in an attempt to rank the 100 counties or other geographic units most severely contaminated by toxic chemical releases.[35] The bill would support community groups in those areas with technical assistance grants, provide for comprehensive health surveys in those vicinities, require enhanced inspection of area facilities, and provide for a moratorium on new pollution sources in such communities. Comparable measures have been introduced at the state level.[36]

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[33] See Peter L. Reich, "Greening the Ghetto: A Theory of Environmental Race Discrimination," 41 U. Kans. L. Rev. 271 (Winter 1992) (concluding that greater opportunities exist at the state than at the federal level to address environmental race discrimination because of problems of proof and access to information under federal civil rights and environmental laws). See also Cole, supra note 2, at 632, n.36, n.37 (listing articles discussing and cases raising civil rights causes of action to remedy environmental injustice); Lazarus, supra note 3, at 59-80 (describing the difficulties of litigating to remedy distributional inequities under the civil rights laws); Vicki Been, "What's Fairness Got to Do With It? Environmental Equity and the Siting of Locally Undesirable Land Uses," 78 Cornell L. Rev. (forthcoming 1993).

[34] S. 720 "Indian Open Dump Clean-up Act of 1993," 103d Cong., 1st Sess. (introduced by Sen. John McCain (R-AZ) ("to identify open dumps on Indian lands and to close them in compliance with federal or tribal standards, whichever are stricter"); H.R. 1267 untitled, 103d Cong., 1st Sess. (introduced by Rep. Bill Richardson (D-NM) ("to grant state

(Footnote continued)

Whatever the fate of a particular piece of legislation, given the breadth of the problem described in the studies referenced in this Report, expeditious and effective responses to the problem of environmental injustice by administrative agencies are critical. Some responses, although limited in scope, already have been forthcoming from the federal

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(Footnote continued)
status to Indian tribes for purposes of enforcement of the Solid Waste Disposal Act"); H.R. 1925 untitled, 103d Cong., 1st Sess. (introduced by Rep. Barbara Rose Collins ("to amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to require the Administrator of the Agency for Toxic Substances and Disease Registry to collect and maintain information on the race, age, gender, ethnic origin, income level, and educational level of persons living in communities adjacent to toxic substances contamination"); and H.R. 2105, "The Environmental Justice Act of 1992," 103d Cong., 1st Sess. (introduced by Rep. John Lewis (D-GA) ("to establish a program to assure non-discriminatory compliance with all environmental, health and safety laws, and to assure equal protection of the public health").

[35] H.R. 2105, introduced by Rep. Lewis (D-GA). Similar bills were introduced in the 102nd Congress by then-Senator Albert Gore (S. 2806) and Rep. Lewis (H.R. 2105).

[36] CA AB 3024, Assembly Bill 3024 (introduced by Lucille Roybal-Allard (D-Los Angeles)), introduced, passed and vetoed by Governor Pete Wilson (required permit applications for toxic facilities to include site demographic statement listing race, age, language and income characteristics of targeted communities); NY AB 9902, Assembly Bill 9902 (introduced by Maurice Hinchey (D), March 4, 1992), 2nd Reg. Sess. of 214 NY State Gen. Assembly (establishes in Depart. of Env. Cons. task force on environmental equity and provides powers and duties).

government. For example, over the past three years, EPA has established an Office of Environmental Equity and has expanded its education and outreach programs to minority and low-income communities. Administrator Carol M. Browner has stated that environmental justice is one of the key policy themes of her tenure at the EPA, and has announced several new initiatives in this area.[37] However, more needs to be done to reform the administrative process to achieve environmental justice, not only by EPA but by other federal agencies.[38]

Academia has played a significant role in developing the growing body of literature in the environmental justice field. Law schools have made their own unique contribution to the field by adding courses (or new units to existing courses) on environmental justice to their environmental law curricula.[39] The goals of these courses are to educate law students about the legal issues in the environmental justice field, to impose some rigor on the study of those issues and to contribute to the growing body of scholarship. In addition, law school clinical programs are representing low income and minority

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37. See Statement of Carol M. Browner, Administrator, U.S. Environmental Protection Agency, before the Government Operations Committee, United States House of Representatives, May 6, 1993. Administrator Browner pointed to, among other things, new lead paint initiatives, an interagency working group to address environmental justice, and agreements between the EPA and the Civil Rights Division of the Department of Justice.

38 See, e.g., Oversight Hearing: Environmental Racism, Hearings Before the Subcommittee on Civil and Constitutional Rights of the Senate Committee on the Judiciary, 103rd Cong., 1st Sess. (March 3, 1993) (Statement of Deeohn Ferris, Program Director, Lawyers' Comm. on Civil Rights Under Law) (recommending changes in agency priorities, creation of a new inter-governmental coordinating council and improvements in access to governmental decisionmaking).

39. For example, Georgetown University Law Center has added a three-unit seminar on environmental justice specifically to contribute to scholarship in the field. The Vermont Law School's Environmental Law Center is hosting a speaker series this summer in "Race, Class, Justice and Environmental Policy" to educate its students in this area and to add specific courses to examine the issues further. Student efforts are under way at Boalt Hall at the University of California at Berkeley to institute an environmental justice course.

communities in their efforts to resist these burdens.[40]

5. The Need for Action By the American Bar Association

It is both appropriate and desirable for the American Bar Association to articulate a clear position on the issue of environmental justice. The legal profession has a duty to speak out forcefully on such an important issue. In fact, the proposed resolution reflects perfectly this year's theme for the American Bar Association (ABA) enunciated by ABA President J. Michael McWilliams: "All for justice, and justice for all." President McWilliams has stated that many sectors of this society, including lawyers and non-lawyers, must join forces to fulfill this justice system goal. On its face, the resolution is a strong endorsement of this important theme. The resolution recognizes that all segments of society -- both public and private -- have important roles to play in responding to these injustices.

From a public policy perspective, adoption of this resolution promoting environmental justice will support efforts to (1) identify and ameliorate the health care problems suffered by inhabitants of affected communities, (2) respond to major quality of life issues facing the residents, (3) set priorities for responding to major environmental problems, and (4) identify the tools, resources, and enforcement authority available to the federal, state and local governments.

For the foregoing reasons, therefore, the proponents of this resolution urge the House of Delegates to adopt the proposed resolution which recognizes that environmental justice should be a goal for this nation, and supports, in principle, the passage of legislation (or the amendment of existing legislation) to the extent necessary, for example, to achieve the goals as set forth in the resolution. In addition, the resolution is intended to support:

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[40] Georgetown University Law Center started an environmental justice clinical program in 1991, which has already helped a low income, minority neighborhood resist the siting of an industrial waste processing facility and prevent the expansion of an automobile recycling facility into another low income minority community. The Clinic is currently working with other similar neighborhoods to clean up an improperly closed municipal ash pile on the grounds of a public mental health hospital, fight the construction of a freeway, remove oil from a tributary of the Anacostia River, and get lead out of public housing. See Washington Times, "Georgetown Students Dump on Junk East of the Anacostia," at A7 (June 15, 1992).

- public and private efforts to continue documenting the incidence, causes and consequences of the inequitable distribution of environmental costs and benefits;
- initiatives to improve agency procedures regarding access to information and to the decisionmaking process and the assessment of risks to low-income and/or minority communities from environmental hazards;
- additional training of lawyers, scientists and other specialists in the environmental field to address environmental justice issues and the provision of greater job opportunities for minority and low-income individuals in the environmental field;
- delivery of legal services in the area of environmental law to eligible persons in minority and/or low-income communities as a particularly[41] appropriate priority for the legal profession"; and
- expansion of environmental curricula and law school clinical programs to educate students about the problems of environmental injustice and to provide legal assistance for its victims.

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[41] The term "legal services" is meant to be interpreted in the broadest possible sense as inclusive of all efforts, both public and private, including pro bono work, to offer legal assistance to those unable to afford private legal services at market rates. The resolution language is not intended to suggest that environmental law be given greater priority than other vital areas of assistance. However, environmental law has not been a traditional specialty of providers of legal services and the Committee seeks to increase the profession's and providers' awareness of the issue and thus their consideration of appropriate responses to help meet the need for representation.

The proposed resolution, by addressing itself to a wide spectrum of entities, recognizes that environmental policy is made by many, and that there are multiple opportunities to correct the causes and consequences of environmental injustice.

In view of the foregoing reasons, the Standing Committee on Environmental Law, the Section of Individual Rights and Responsibilities, the Commission on Homelessness and Poverty, the National Bar Association, Inc. and the Hispanic National Bar Association urge the House of Delegates of the American Bar Association to adopt this resolution promoting environmental justice.

Respectfully submitted,

Dinah Bear, Chair
Standing Committee on
Environmental Law

Paul L. Friedman, Chair
Commission on Homelessness
and Poverty

Janet R. Studley, Chair
Section of Individual
Rights and Responsibilities

Allen J. Webster, Jr., President
National Bar Association, Inc.

Carlos G. Ortiz, President
Hispanic National Bar Association

August, 1993

Mr. SWIFT. Thank you, Mr. Hill.

Mr. Paul Murray.

STATEMENT OF PAUL MURRAY

Mr. MURRAY. Thank you, Mr. Chairman. I am Paul Murray, the environmental manager for Herman Miller, Inc., an office furniture manufacturing firm in Zeeland, Mich. However, I am here today representing the National Association of Manufacturers and its 12,500-member companies.

In my capacity as chairman of the NAM Environmental Equity Task Force, I would like to thank you for the opportunity to represent the manufacturing community in this important hearing and I will keep my remarks brief and to the point.

Member companies of NAM recognize the importance of this issue and our task force has convened on a regular basis even as recently as yesterday. We are developing a policy which will provide a framework for addressing the issue of environmental equity which we believe means equal protection from the environmental hazards for all Americans.

Mr. Chairman, NAM would like to leave one clear message with you and the others in attendance today. The National Association of Manufacturers takes this issue very seriously. Recognizing this issue is technical, scientific, economic, and emotional, we are committed to working cooperatively with the Congress and other organizations that are concerned with environmental equity issues.

Mr. Chairman, we respectfully suggest the question of environmental equity raises concerns on two levels. First, situations that many believe are obvious and in need of immediate correction, such as bringing a specific site or facility into environmental compliance.

Second, concerns that are more complex and long-term in both nature and resolution such as the relationship between exposures to hazardous substance and the health risks.

I would like to briefly mention a few things the NAM Task Force on Environmental Equity is working on to address both levels of concern. Immediate action to address environmental concerns can be taken by insuring all appropriate Federal, State, and environmental regulatory agencies administer and enforce environmental statutes and regulations in a consistent and conscientious manner, regardless of the racial, ethnic or socioeconomic composition of the communities in which the regulated activities occur.

We are strongly opposed to any form of intentional discrimination in the administration of environmental programs.

Mr. Chairman, we believe that the consistent enforcement of existing laws and regulations will result in significant progress towards cleaning up these facilities and sites which are of greatest concern to local citizens.

To address the longer term, more complex health issues, we believe strongly in the need for continued focus, scientific research into potential links between exposure to pollutants and adverse health effects. We support the efforts underway to develop that scientific data.

We suggest scientific research should be conducted by a neutral third party with national credibility and should include analysis of all factors influencing human health in a community, including facility operations, access to health care, diet, life-style, housing, and what other appropriate health-related factors affected groups believe should be evaluated.

Mr. Chairman, I will be candid. We have heard some people say the business community only wants to use further scientific study as a way to deny responsibility or delay a solution to what may be industrially-related health problems. This is simply not true. We firmly believe studying all factors relevant to human health in a given community will allow the development of effective programs that address the actual causes of these health effects, whatever they are found to be. Scientific study will provide the foundation for a long-term solution and strategies to prevent the occurrence or recurrence of environmental hazards.

We also support environmental policies, statutes, regulations that provide equal protection from unacceptable health risks to all communities regardless of their racial, ethnic or socioeconomic composition. This would include programs designed to identify and eliminate unacceptable risks associated with manufacturing and waste management operations in the development of appropriate emergency response training and coordination plans.

Finally, of equal importance, we believe local citizens should be informed of decisions by government and industry that affect local communities. We believe consistent voluntary outreach by government and industry to communities will help establish productive channels of communication and allow companies to respond to community concerns.

Mr. Chairman, you asked us to comment specifically on three pieces of legislation pending before Congress. H.R. 1924, the Environmental Equal Rights Act of 1993 poses serious concerns to all of us. In effect, this legislation would give any citizen the power to deny the siting of almost any type of industrial facility in certain areas simply because the facility will produce waste by-products.

Mr. Chairman, every manufacturing or production process produces waste by-products. This bill assumes the mere presence of a material is unacceptable and that it cannot be handled in a manner protective of human health. Again, this is simply not true. Furthermore, the bill seeks to impose serious restrictions on legitimate business and municipal activities based on the perception these cause environmental damage. The conditions under which these prescriptions can be imposed are not based on sound science and might have no measurable environmental benefit. We are concerned that the reach of this bill is too broad and could result in unintended adverse effects on the local economies and redevelopment efforts.

H.R. 1925, the Environmental Health Equity Information Act of 1993 appears to be a reasonable bill that attempts to fill an important gap in the EPA data collection efforts. As the EPA's 1993 study of environmental, equity-reducing risks for all communities pointed out, the type of racial, ethnic and socioeconomic data that could assist the EPA in developing permanent siting is not collected by the Agency. This bill would require the collection of such data and establish an information bank that could be used to address future concerns about disproportionate siting of certain types of facilities or allegations about disproportionate distribution of adverse health effects.

Mr. Chairman, we have a mixed reaction to H.R. 2105, the Environmental Justice Act of 1993. Again, we are very supportive of the concept of the call for national level scientific study about the full health effects of industrial activities. It is only from a sound understanding of the cause and effect relationships that we can develop an appropriate long-term response to actual problems.

However, we are concerned about the method the bill proposes to use to determine where such a study could take place. By simply relying on the total weight of chemicals present in an area as the trigger for the designation of an environmentally high impact area, the bill does not consider the critical question of actual human exposure to such chemicals.

Such an omission may lead to unnecessary study in some areas while ignoring areas that might actually be more appropriate for study. In addition, we are very concerned with the economic impact that designation as an EHIA might have on business in local communities. Once an area is designated, businesses will be disinclined to expand an existing facility or locate a new facility in such an area resulting in lost economic and economic rejuvenation opportunities. In addition, overall land values in such an area are likely to fall for all property owners due to the stigma associated with being designated.

Finally, we are concerned with a moratorium on business activities that H.R. 2105 would impose if health studies found adverse health effects in an EHIA. This would operate as an outright ban on certain industrial activities without consideration of beneficial aspects that activity might bring to a community.

We believe Representative Lewis' bill contains good approaches to addressing environmental concerns. We welcome the opportunity to meet with him to address our concerns and share suggestions as to how the bill might be improved.

In conclusion, I would like to emphasize the National Association of Manufacturers has made the resolution of this issue one of its top priorities and we want to work with you, the other Members of Congress, the EMA, and other governmental and non-governmental organizations to achieve environmental equity for all Americans.

Thank you.

Mr. SWIFT. Thank you, Mr. Murray.

Mr. McDermott?

STATEMENT OF CHARLES J. McDERMOTT

Mr. McDERMOTT. Amongst the pleasures of being the last of some 14 witnesses today is much of what I planned to say will now be redundant. On the other hand, I am stimulated by some of the testimony that I have heard today. I might run through certain parts and comment on some of the things I heard today as part of my testimony, if I may.

My name is Chuck McDermott. I am Director of Government Affairs for WMX Technologies, Inc., a leading provider of a broad range of environmental services. We appreciate this opportunity to testify today.

We see the issue of environmental justice as one that brings into focus much of the work that remains to be done in improving our Nation's system of environmental protection.

As has been said, when poor families, 68 percent of black children suffer from lead poisoning, which is in ratios twice that of their young white counterparts, we feel we have a problem. When we look at the rates of exposure to excessive levels of carbon monoxide and learn 57 percent of Hispanic Americans suffer from excessive exposures, 46 percent of Afro-Americans suffer from excessive exposures versus 33 percent of whites, we are led to the conclusion environmental liabilities are not evenly distributed between racial groups in this country.

When we arrive at this crossroads, where issues of race and environment meet, we, as a corporation, see one problem as fundamental, one which is sometimes lost or obscured in the emotion of this debate. That problem is pollution.

We would suggest that pollution has a number of sources. Oftentimes, as we have heard in today's testimony, the discussion tends to focus on a certain subset of pollution sources such as off-site hazardous waste disposal. We would suggest the problem of an unfair distribution of pollution is caused by no one activity, no one industry, but more by a pattern of decisionmaking about where we place factories, refineries, highways, where we place our waste disposal facilities, and where we place our communities; nearby those, in some cases, that can cause disproportionate exposure to emissions for disadvantaged groups of people.

Based on our experience as a company that is operating in the environmental world, and our exposure to much of what has been said and written on this topic, we feel the problems at the root of the environmental justice movement are real; that we as a society need to use the tools at our disposal to combat these problems, and that congressional action is appropriate.

We would suggest, as has been suggested by others, that the members of this subcommittee give special consideration to the area of cumulative loadings. While a great deal of regulatory and legislative environmental rulemaking has focused on sole source emissions, to a lesser extent we have focused on the cumulative impacts of emissions into the air, land, and water, which occur over time in individual geographic areas.

While we know a great deal in some circumstances about emissions in certain air districts, emissions in certain water districts, discharges, chemicals stored in the land through the RCRA program, we do not know a tremendous amount about the cumulative, synergistic effects of those emissions over time.

We feel that further, in the pursuit of environmental justice, we need to begin, one, with an insistence on nondiscriminatory enforcement of existing environmental laws, but that new legislative initiatives should be guided by an understanding of which populations are suffering the greatest exposures to pollution and what the impacts of those exposures may be.

I will turn now to the three bills under consideration and offer some comments. I will first comment on H.R. 1924, the Environmental Equal Rights Act. I think that this is important; and as you have suggested to other witnesses, feedback on how this subcommittee might proceed in terms of a comprehensive versus targeted approach, I would like to address that in these comments. We will also be pleased to provide more detailed comments on this bill for the record.

Our major concern with the Environmental Equal Rights Act of 1993 is that unlike the other bills considered today, it focuses exclusively and unjustifiably, we believe, on new facilities for the management of waste. We firmly believe there is no sound reason to single these facilities out, especially in light of rigorous controls achieved by this subcommittee's efforts through RCRA and the Clean Air Act, which are designed to ensure that these facilities are protective of human health and the environment.

It is a matter of fairness that no one activity be singled out and a broader application of this bill to all activities which generate emissions would be unthinkably chaotic. Meanwhile, cumulative impacts that can cause real problems go unaddressed.

Let me stress that we are not urging an exemption for waste management facilities, but urging a nondiscriminatory comprehensive approach. In addition, we are concerned about the following aspects of the bill. There is a longer list we will provide you.

Any citizen can petition to prevent issuance of a permit to operate even after the facility is constructed at substantial cost, and under a permit there are no time limits on when the hearing must commence or conclude or when decisions to grant or deny the permit must be made.

Finally, the standard for granting the petition and denying the permit is that the facility "may" rather than "is likely to" cause harm.

In our view, the results of these features in H.R. 1924 will be interminable further delays in an already lengthy and uncertain, risky, expensive process of seeking to build and operate RCRA regulated facilities that must by law comply with extensive regulations designed to ensure public health and environmental protection.

A lot of our concern is that there is an effort to control the activities of a certain industry and certain types of activities and that is really unrelated to any documentation of disproportionate risk that those facilities cause.

To give an example, I have read in the last 4 years much of what has been written about the impacts of waste facilities. So I note with interest Ms. Harrington's comments these facilities contribute to the breakdown of the community structure and negatively effect domestic, educational and employment stability.

It is serious, I think, to charge the existence of these facilities negatively affect employment, stability, educational and community cohesion and domestic stability; and I am sure they wouldn't be made without some sort of documentation, which I will look forward to having as soon as you can all provide it.

What we think is problematic about singling out one activity is all of this overlooks the potential for waste facilities and the reality that waste facilities are in many ways tools in the environmental justice movement. Dr. Bullard talked about the cleanup of lead contaminated soil from a playground in west Dallas and how long it took. That clean up was effected in 1992.

We, in fact, won the contract to remove those lead contaminated soils. The final cleanup is considered a victory. Those materials go somewhere. When something is cleaned up, the question is where is up? Oftentimes, we are up.

We would suggest those lead-contaminated soils today are far better off in a permitted, inspected, safely built and operated waste disposal facility than underneath those children who had no place else to play. That can get lost in this.

Also, just to further underscore the need for disposal facilities, according to EPA's numbers, if there is no new waste generated today, 100 percent pollution prevention, no new siting of any further facilities, just the cleanup associated with past industrial activities with existing capacity would take 100 years. So we can lose sight of the fact sometimes that these facilities are necessary and protective.

We feel H.R. 1924 tends to obscure that. We do support H.R. 1925 which amends Superfund to ensure collection of evidence about people adjacent to contaminated sites. This proposed legislation is consistent with the recommendation of the NACEPT committee and should be enacted.

Finally, we support H.R. 2105, the Environmental Justice Act of 1993, the thrust of which is consistent with our view of the need for a comprehensive, science-based and open approach to environmental justice.

We believe it correctly focuses attention and action on the impacts of cumulative loadings of toxic chemicals on human health. We also believe the enactment of this legislation will make a real difference by insuring that the real problems are identified and remedied.

We hope the subcommittee will take the lead in efforts to remedy and prevent environmental injustice by reporting this legislation, and we welcome the opportunity to work with you on it.

We thank you again, Mr. Chairman, for the opportunity to present our views.

[The prepared statement of Mr. McDermott follows:]

STATEMENT OF CHARLES J. MCDERMOTT, DIRECTOR, GOVERNMENT AFFAIRS, WMX TECHNOLOGIES, INC.

Thank you, Mr. Chairman and members of the subcommittee for this opportunity to testify before you today. We see the issue of environmental justice as one that brings into focus much of the work that remains to be done in improving our Nation's system of environmental decisionmaking. We applaud the leadership of the subcommittee, its members and others in the Congress who have introduced the bills on which we comment today and we request permission to submit more extensive comments for the record.

When for poor families, 68 percent of black children in America suffer from lead poisoning, a numbr more than twice as great as for their whie counterparts, we as a Nation have a problem. When looking at rates of exposure to excessive levels of carbon monoxide we learn that 57 percent of Hispanic-Americans suffer excessive exposures, and 46 percent of Afro-Americans suffer excessive exposures—versus 33 percent of white Americans—we are led to the conclusion that environmental liabilities are not evenly distributed between racial groups in this country.

So when we arrive at this crossroads where issues of race and environment meet, we as a corporation see one problem as fundamental, one which can sometimes be lost in the emotion of this debate, and that problem is pollution. We would suggest that the problem of pollution is caused by no one company, or no one industry but more by patterns, patterns of decisions about where we place our factories, where we place our refineries, where we place our highways, where we place our communities, and yes, where we place our waste disposal facilities that cause disproportionate exposure to emissions for a disadvantaged group of people.

WMX Technologies, Inc. is the Nation's leading provider of environmental services. Our views on the issue of environmental justice are shaped by our experience collecting, treating and disposing of everything from commonplace household trash to the most dangerous and toxic materials generated by American industries. We are the leading collector of recyclable materials in the world; we design and build air and water pollution control equipment; and provide a range of other services.

Based on our experiences as a company and our exposure to much of what has been said and written on this topic, we feel that the problems at the root of the environmental justice movement are real, that we as a society need to use the tools at our disposal to combat these problems, and that Congressional action is appropriate.

We suggest that the members of this subcommittee give special consideration in their deliberations on this issue to an area of environmental decisionmaking that has not, historically received a great deal of attention. In our opinion, while there are examples of tremendous harm being caused by emissions from a single source, and the potential for those kinds of problems should not be ignored, the next frontier of environmental activism should be a focus on the cumulative impacts of emissions into the air, land and water which occur over time into specific geographic areas.

The Clean Air Act , the Clean Water Act and many other pieces of important environmental legislation have done a good job of setting emission limits for a host of industries and activities. But while we know a great deal about the air quality in individual air districts, and water quality in individual water districts, and chemicals in storage or buried in the land through EPCRA and the RCRA program, we do not know much about the cumulative and synergistic effects of emissions into the air, water and land in specific areas.

We feel that the pursuit of environmental justice should be driven by an identification of those areas suffering the highest emission loadings, and a determination of whether or not those emissions are causing a strain that is more than the local environment and human health can bear.

While our efforts should begin with an insistence on the non-discriminatory enforcement of existing environmental laws, new legislative initiatives should be guided by an understanding of which populations are suffering the greatest exposures to pollution and the impacts those exposures are causing.

Let me turn now to the three bills under consideration, and offer some comments on each of them.

First, I regret that we cannot support H.R. 1924, the Environmental Equal Rights Act of 1993, in its current form. We would be pleased to provide more detailed comments for the record, but let me briefly summarize our reservations about this proposed legislation.

Our major concern is that, unlike the other bills, it focuses exclusively and unjustifiably on new facilities for the management of waste. We firmly believe that there is no sound reason to single them out, especially in light of the rigorous controls achieved by the subcommittee's efforts through RCRA and the Clean Air Act which ensure that they are protective of human health and the environment. It is a matter of fairness that no one activity be so singled out, and a broader application to all activities which generate emissions would be unthinkably chaotic. Meanwhile, cumulative impacts causing real problems go unaddressed. Let me stress here that I am not urging an exemption for waste facilities. I am urging a nondiscriminatory, comprehensive approach.

In addition, we are concerned about the following aspects of the bill:

Any citizen can petition to prevent issuance of a permit to operate, even after the facility is constructed at substantial cost and under a permit;

There are no time limits on when the hearing must commence or conclude, or when the decision to grant or deny the permit must be made; and

The standard for granting the petition and denying the permit is that the facility "May" rather than "is likely to" cause harm.

In our view, the result of these features in H.R. 1924 will be interminable further delays in an already lengthy, uncertain and risky process of seeking to build and operate RCRA-regulated facilities that must, by law, comply with extensive regulations designed to ensure public health and environmental protection.

We support H.R. 1925, which would amend Superfund to ensure collection and maintenance of information about the people residing adjacent to contaminated sites. This proposed legislation is consistent with the recommendation of the NACEPT Superfund Evaluation Committee, and it should be enacted.

Finally, we support H.R. 2105, the Environmental Justice Act of 1993, the thrust of which is consistent with our view of the need for a comprehensive, science-based, and open approach to environmental justice. we believe that it correctly focuses attention and action on the impacts of cumulative loadings of toxic chemicals on human health. We also believe that enactment of this legislation will make a real difference by ensuring that the real problems are identified and remedied. We hope that the subcommittee will take the lead in efforts to remedy and prevent environmental injustice by reporting the legislation, and we would welcome the opportunity to work with you.

We believe that the environmental justice goals of H.R. 1924 can and will be fully achieved by enactment of H.R. 2105, and we would be pleased to work with you to ensure that result.

Thank you, Mr. Chairman, for this opportunity to present our views on this important subject.

Mr. SWIFT. Thank you all very much. I would like to explore with the panel—because the issue has come up on this panel and because we have at least two lawyers, and it is essentially a legal problem, and that is the question of standing. I am talking particularly about Ms. Collins' bill. Who can start the process that would deny a facility?

I have talked with Ms. Collins about it. I have concerns in this regard. She says it is not her intention that any single person or the Sierra Club in San Francisco can find a local citizen and trigger the process. Not being a lawyer, I have been told, however, it can be kind of tricky figuring out how you craft that language so that it achieves the purpose that she has in mind.

It is further complicated by the fact that it is hard sometimes in these communities to determine exactly who the accountable sources are. If it was all nice and neat in each of these communities, they had elected political positions that discretely fit their area, we would say go to the elected officials. Often these communities don't. They either have the influence and the overall political jurisdiction and do not have elected officials that represent neatly their discrete communities; so trying to define who is a responsible party that can, under this provision of the bill, in effect, have the standing to speak to the community or at least be accountable to the community is a question.

I am wondering what light you all might be able to shed on how we can approach trying to refine that part of the bill so it achieves what I think, on the face of it, it intends to do. I am not sure the current language actually achieves that.

Ms. Harrington, can you help us on that at all?

Ms. HARRINGTON. We understand the subcommittee's concern in this area. We are willing to work with you in discussions on the issue. I think what we have to keep in mind, though, is that waste facilities, other polluting industry, can seriously impact citizens who are located across State lines. Any amendments to this area should parallel other environmental statutes where citizen suits provisions allow any citizen to begin litigation.

Mr. SWIFT. Mr. Hill? Any thoughts?

Mr. HILL. This is a very troubling issue within the ABA hierarchy, and I am also at a conflict because I represent in certain circumstances the NAACP as far as its efforts to try to get the Environmental Justice Act enacted by the Congress, because it is very important to have a private right of action.

But it is something that the ABA is willing to really look into and to assist this particular committee in trying to come up with a scheme, a process, a mechanism that it would be fair for the people who are affected, who are damaged; but it is also fair for the defendants, because it is not right necessarily that one citizen can stop a new facility from coming in to a community.

You have to somehow know the balance or the facts in interest in a situation. I think further study needs to be done on that particular issue.

Mr. SWIFT. I think that that is probably true. It just seems to me that what Cardiss is trying to achieve is fairly obvious on the face of it. It is not the first time in writing legislation that I found what is easy to kind of describe in layman's terms becomes a real nightmare to try to describe in legal terms.

I might ask Mr. Murray if I had described Mrs. Collins' intent correctly—let's assume that for the sake of this question—do you have any problem with that intent? I can see why you have problems with the language, because I have problems with the specific language.

Mr. MURRAY. The intent of involvement by the community is very good. You know, we welcome that. I think that most industries across-the-board would welcome that. But when it comes to an individual being able to stop the siting of the facility, when it means a lot of growth for the community, it becomes a double-edged sword that is being wielded.

On the one hand, there is the economic growth that brings better life-styles, better health care, that whole gamut. The other side is the pollution that manufacturing facilities would be bringing in. So for one person to stop that is a concern for industry, no doubt.

Mr. SWIFT. But I am hearing you say if there was a way to do it so the community, in some broader sense, can make a judgment on it, presumably weighing environmental hazards versus economic benefits and so forth and make a judgment, in some way accountable to that community, not necessarily to you and me—that at least generically, theoretically, you would have no problem with it? It is really trying to find a way to get the statutory language to say what the intent is. That is the trick here?

Mr. MURRAY. I believe that that is true. Otherwise, they wouldn't have recommended that I come here and speak. I am representing NAM. If we were not in a position or trying to get into a position where we are knowledgeable in the whole concept so that we can participate in that discussion; I think that is what we are really looking forward to. That is why we are here today, so that we can participate as these bills or other bills go forward.

Mr. SWIFT. I think Mr. Hill's offer that the ABA would be willing to help, and I talked with Ms. Harrington a little bit before the hearing, she seemed to—and I don't want to put words in your mouth—seemed to recognize the problem. You also said that you thought it was resolvable.

This is, I think, a very key hurdle to overcome so we can proceed. Any comments?

Ms. HARRINGTON. That is absolutely true. I do think this is resolvable. We are actually working on some language that would refine the standing provision; and again, we would like to work with the committee and maybe have your input on this language.

I do think that the provision has to be broad enough to take into account the whole impact of a facility siting. You have to take into account the perception. For instance, in the Noxubee County case, you have two facilities that will be 15 miles apart in one county.

It is the perception that county is tainted. We wouldn't want to limit someone living at one end of the county, where we wouldn't limit another person living at the other end. You just have to consider those factors. I do think there are techniques for doing that.

Mr. SWIFT. Mr. McDermott?

Mr. MCDERMOTT. Mr. Chairman, we see this not so much that the Environmental Equal Rights Act, not so much as a mechanism to improve community involvement. RCRA requires that there be a community involvement process which it delegates to the States. Doesn't always work perfectly, but by law, communities—the local community must have the right to comment on the need or the safety or the desirability of a facility.

We see this more as creating a new process whereby a permit can be delayed or denied for a certain type of facility without any showing of health risks or other impacts to the community.

Mr. SWIFT. Don't other communities have that? I have a community where you cannot put in 25 feet of sidewalk without a citizens' committee getting involved. Literally. That happened in my own town. Sidewalk. Twenty-five feet. Citizens' community. Six months delay. They didn't prove a damned thing except they were citizens and wanted to be heard. Why is that wrong?

Mr. MCDERMOTT. I am saying in this bill it is saying if a waste facility already exists in this area and another one is proposed to be sited, a special process is now available.

Now, for the community to weigh in and perhaps deny the permit, it doesn't speak to an establishment of health impacts caused by either the first or second facility.

It makes a presumption, if you will, there will be a health impact. The permit can be denied if the second facility may cause a health impact, which is a very high standard to try to meet; and it is a standard that no other activity which produces emissions and therefore possibly health impacts is held to.

Mr. SWIFT. I think I understand your distinction. I think there was merit to it.

It seems to me—and anybody correct me if I am wrong—that what this overall hearing has been about, however, is how do communities which, for a variety of other reasons, do not seem to have as much control over their own fate as do others in society structure it so that they are empowered to have that control?

I think some of our environmental laws raise the kind of problem that you suggest for everybody. I don't know that that is good policy. I just do not know why some should be able to play the game and some others should not. Either we should change that law for everybody or we should see that it applies equally to everybody, but not decide that when it comes to a minority community, that is where we are going to say, well, this doesn't make much sense so we will not apply it there.

I don't think that is what you are saying either; is it?

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Mr. McDermott. No.

Mr. Swift. It also seems to me you are raising issues that are very broad problems with some existing law.

Mr. McDermott. Well, perhaps we are.

Really what we are trying to say is we acknowledge it might be situations where there is a preponderance of activities creating emissions that are more than the local community, the environment, or the human health can bear. That is what should probably get our special attention.

The way the laws are written right now, if Ms. Harrington is operating an auto plant, and I operate a steel mill, and Jack has a dry cleaner, Barry Hill is operating in another capacity, and we can satisfy the criteria to get air permits and water permits, we are all allowed to operate. No one is looking at the cumulative impacts of our emissions together in this room over the next 10 years and what effect that might be having on human health.

All of us have had to satisfy certain criteria that we can operate in parameters the Congress and EPA have decided are safe in isolation. We are acknowledging that there is a blind spot right now that doesn't take into consideration what we are all doing together simultaneously, might be doing to human health. We suggest that that is probably the area of greatest scrutiny.

We live with EPA inspectors on our major facilities 365 days a year. They occupy trailers. They are checking to see how close the grass grows to our signs directing the trucks into the facility, not to say that we operate every hour of every day achieving a zero emission standard we are held to, but we try. That is, the law says that is what we must do. So it seems to us that perhaps it is not the correct prioritizing, although it might be politically expedient—and I don't mean for this committee, but I mean more generically to target waste facilities.

They can be a lightening rod for people's general anxieties about the environment. I am not so sure we will improve the standard of living for the people whom we all care about, whose lot we are trying to improve by merely taking the waste management industry and dealing with them in isolation.

Mr. Swift. I think I understand your point.

Well, unless anybody else has anything to—Ms. Harrington?

Ms. Harrington. A point of clarification. I just want to put on the record that there is extensive evidence on the psychosocial effects on a host community, essentially establishing there is a higher incidence of unemployment, domestic violence, and other social impacts. We are willing to make that available to the subcommittee and to other members to basically confirm what we have said in our testimony.

Mr. Swift. OK. Thank you.

If we are able to do anything with regard to any of these bills we have been listening to, opportunities may occur early next year. We hope we can have a recycling bill early in the year. That may be an opportunity for one or more of these provisions. We are working very hard to have a Superfund bill sometime next year. That may provide us with an opportunity.

I am kind of suggesting timeframes when some of these issues that need more work might need to get resolved.

I think any—we will be in touch with you. But I think you, Ms. Harrington, particularly, because we talked earlier, understand what my concerns are. Anything your thinking cap provides that you care to share with us in that timeframe, we would greatly appreciate.

I think we will be in touch with you, Mr. Hill, in particular, and anybody else in the room who is interested in this and understands what this concern is and would like to help us find a way to achieve the end in an accountable way and thinks they can help us, we would very much like to hear from.

I thank you all very, very much. You have been very patient. We appreciate it.

If you two kids work it right, you ought to get a heck-of-a-good lunch.

The subcommittee stands adjourned.

[Whereupon, at 12:45 p.m., the hearing was adjourned.]

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